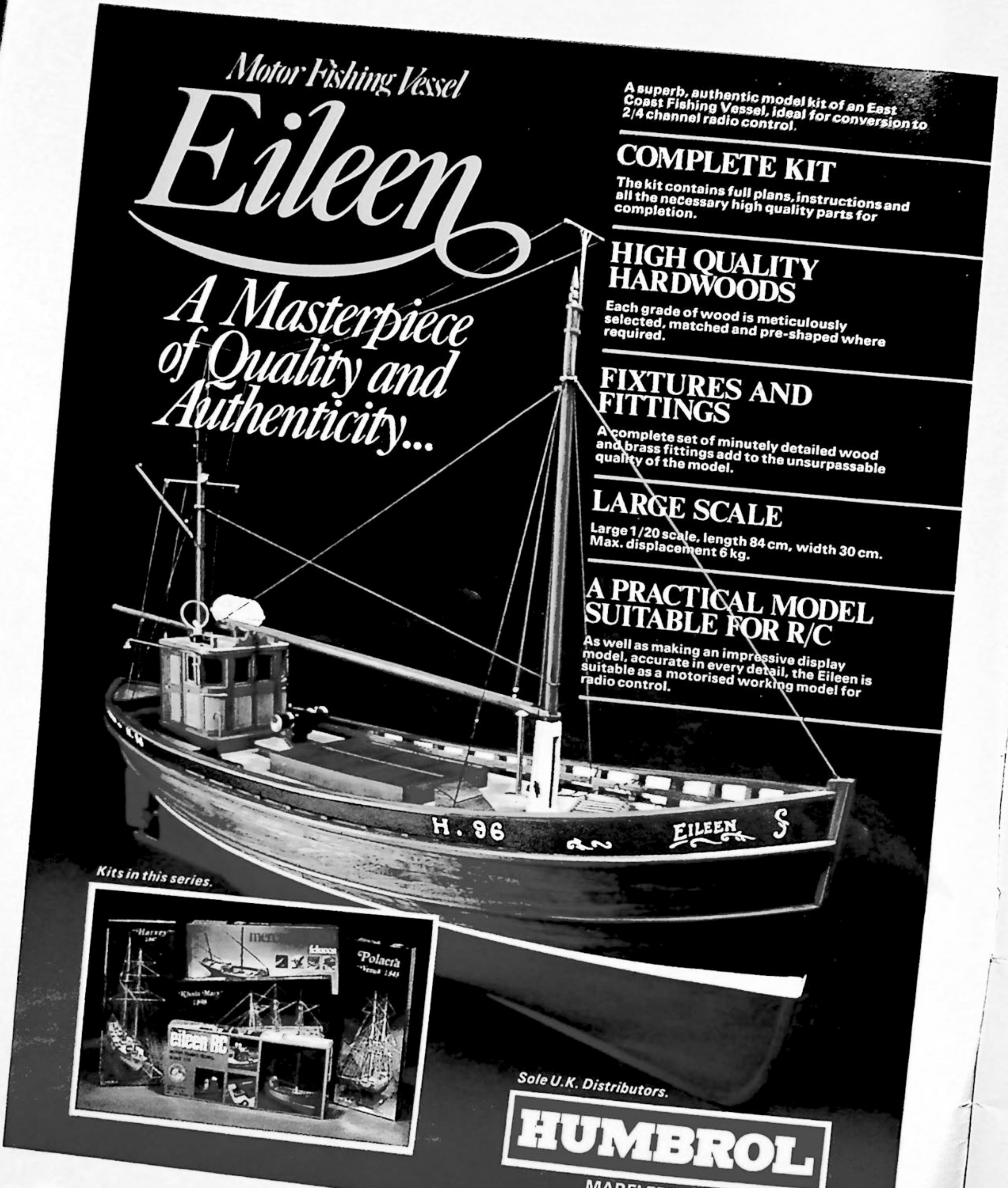
Model Boats

June 1979 45p
(U.S.A. & Canada $2.00)
MAP HOBBY MAGAZINE

Plan Features Plan Features Plan Features

Warspite * Kotia Sailing Dhow



Motor Fishing Vessel

Eileen

A Masterpiece of Quality and Authenticity...

A superb, authentic model kit of an East Coast Fishing Vessel, ideal for conversion to 2/4 channel radio control.

COMPLETE KIT

The kit contains full plans, instructions and all the necessary high quality parts for completion.

HIGH QUALITY HARDWOODS

Each grade of wood is meticulously selected, matched and pre-shaped where required.

FIXTURES AND FITTINGS

A complete set of minutely detailed wood and brass fittings add to the unsurpassable quality of the model.

LARGE SCALE

Large 1/20 scale, length 84 cm, width 30 cm. Max. displacement 6 kg.

A PRACTICAL MODEL SUITABLE FOR R/C

As well as making an impressive display model, accurate in every detail, the Eileen is suitable as a motorised working model for radio control.

Kits in this series.

Sole U.K. Distributors.

HUMBROL

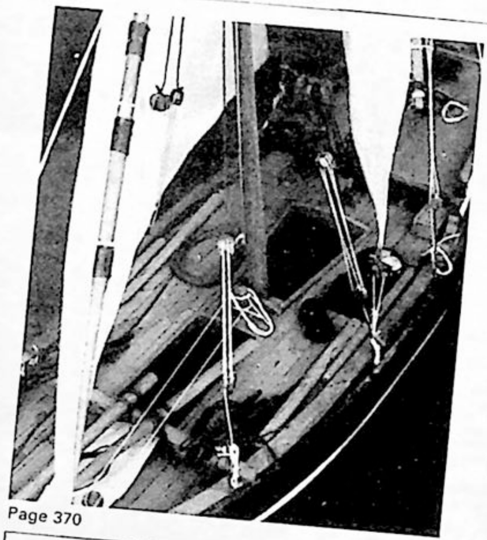
MARFLEET · HULL

Editorial Director *R. G. Moulton*
Editor ***JOHN CUNDELL***
Managing Director *Gospatric Home*
Group Advertisement Manager *M. Gray*
Consultant *V. Smeed*

JUNE 1979
VOLUME 29
No. 340

Model Boats

Incorporating Model Maker



Page 370

CONTENTS

348 ALL POINTS – All the latest news
352 SPRAY RAILS – Multi-race news from Roger Burrell and friends
356 LOG BOOK – Model Yacht Association news
358 HMS WARSPITE – drawings for the famous battleship
360 HMS GREY GOOSE – Part two of our kit review
364 FIGHTING FLEETS IN MINIATURE – King George V Battleships
366 MARINE STEAM – More hints and tips
370 KOTIA – A different sailing dhow
373 TRADITIONAL STEAM ENGINES – Basil Harley looks at jet propulsion
374 BUSSARD – River patrol boat kit review
376 STEAM GUNBOATS – Part two by John Lambert
378 PROPWASH – MPBA news
380 ROUND THE REGATTAS – Early season reports
382 MODEL BOATING WITH RADIO CONTROL – Planning the installation

COVER:
Portuguese Two Master – popular magazine design in USA, photographed at Newport, California, where the Lido Island moorings include luxurious marine craft of the movie stars and Californian noteworthies, including those of Bill and Anita Northrop, publishers of *Model Builder* from whose broadwalk this photo was taken by Ron Moulton.

Correspondence anticipating a reply must be accompanied by a stamped, self-addressed envelope or equivalent. Forthcoming events should be notified at least five weeks before publication date and are included as space permits. Prospective contributors are invited to send a self-addressed, stamped envelope for copy of our 'Model Boats Guide to Contributors'.

OTHER M.A.P. TITLES INCLUDE:
AEROMODELLER, RADIO CONTROL MODELS & ELECTRONICS, MODEL RAILWAYS, MILITARY MODELLING, SCALE MODELS, MODEL MECHANICS, PHOTOGRAPHY, MOVIE MAKER, GEMCRAFT, UNDERWATER WORLD, PUZZLER'S WORLD, PUZZLES DIGEST, MODEL ENGINEER, POPULAR ARCHAEOLOGY, OLD MOTOR, WOODWORKER, CLOCKS.

ABC

MAP **Model & Allied Publications Ltd**
P.O. BOX 35, BRIDGE STREET, HEMEL HEMPSTEAD, HERTS, HP1 1EE. Tel: H.H. 41221

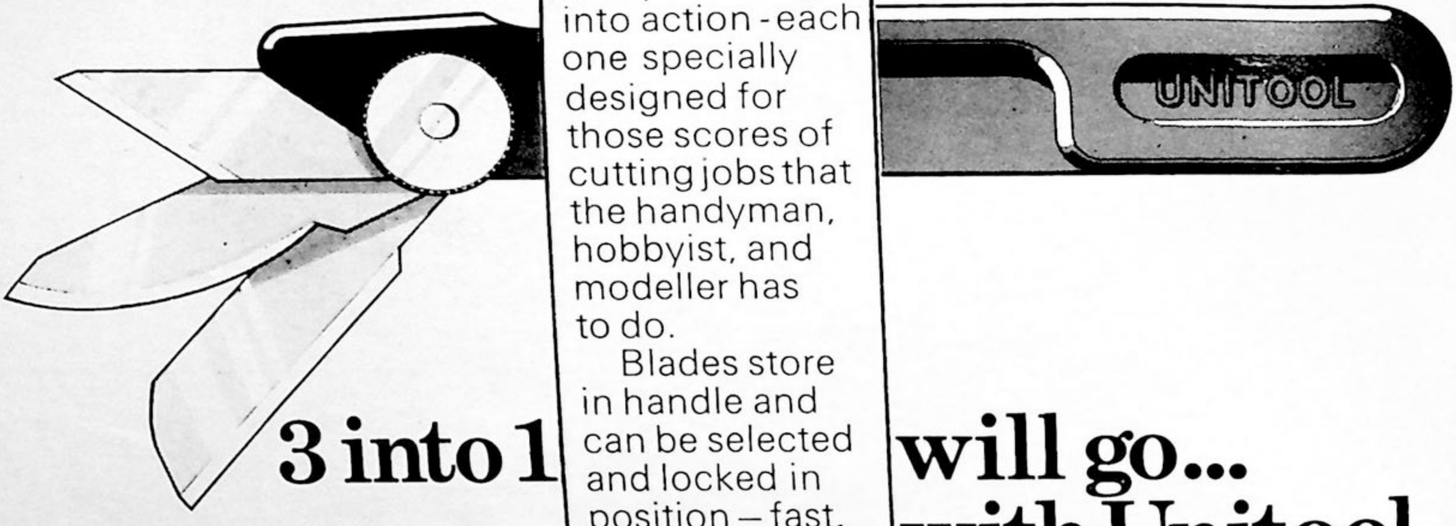
This periodical is sold subject to the following conditions: that it shall not, without the written consent of the publishers, be lent, re-sold, hired-out, or otherwise disposed of by way of Trade at a price in excess of the Recommended Minimum Price and that it shall not be lent, re-sold, hired-out or otherwise disposed of in a mutilated condition, or in any unauthorised cover by the way of Trade or affixed to or as part of any publication of advertising, literary or political matter whatsoever.

Second class postage rates paid at New York, NY. Registered at the Post Office for transmission by Canadian Magazine Post. American inquiries regarding news-stand sales should be sent to MODEL BOATS, Eastern News Distributors Inc., 111 Eighth Avenue, New York, N.Y. 10011, U.S.A., hobby shop sales to Bill Dean Books Ltd., 166-41 Powells Cove Boulevard, Whitestone, New York 11357 U.S.A. Telephone (212) 767-6632.

SUBSCRIPTION DEPARTMENT: Remittances to MODEL & ALLIED PUBLICATIONS Ltd., P.O. Box 35, Hemel Hempstead, Herts HP1 1EE. (Subscription Queries Tel: 0442-51740). Subscription Rate £7.50 per annum inland and overseas Sterling. $15.00 overseas Dollars.

The Advertisement Manager reserves the right to refuse or suspend advertisements without giving any reason. Every care is taken to avoid mistakes, but the publishers cannot be held liable in any way for clerical and printing errors or omissions. Receipt of 'copy' for publication implies acceptance of these conditions by the advertiser. Whilst every care is taken to exclude advertisements from doubtful sources, no responsibility can be accepted by the publishers for the bona fides of advertisers.

el Boats is printed in Great Britain by Leicester Printers Ltd., The Church Gate Press, P.O. Box 20, 99 Church Gate, Leicester LEI 9FR, for the Proprietors and Publishers, Model & Allied Publications Limited (a member of the Argus Press Group). Trade Sales by Argus Distributions Limited, 12-18 Paul Street, London EC2A 4JS



Three blades ready to swing into action - each one specially designed for those scores of cutting jobs that the handyman, hobbyist, and modeller has to do.

Blades store in handle and can be selected and locked in position – fast. spare blades inserted easily and quickly.

Use Unitool and make your next job three times as easy.

3 into 1 will go... with Unitool

Swann-Morton

SWANN MORTON LIMITED
PENN WORKS,
OWLERTON GREEN,
SHEFFIELD S6 2BJ, ENGLAND.

WALTRON '79

See us at Sandown Park with the latest in good R/C Equipment four and six channel F.M. systems at better prices than most imported A.M. sets with a fine 20 KHZ A.M. rejection capability. Ask around among the truly knowledgeable F.M. users to see how many of them would risk driving or sailing under, or flying over, the aerial of an A.M. type transmitter operating on an adjacent 'split' with other makes of F.M. systems.

FOR THE NARROW BAND A.M. user. We have the 1979 Mk3 SUPER SERIES 2-3-4 and 6 channel sets just coming into production with new continental standard transmitter circuit and a new tight band, I.C. receiver. Tests of which show a genuine 20 KHZ separation when used alongside the average 'you know who' splatter boxes. When used along with its own kind of clean Tx output and correct Tx discipline then 10 KHZ separation can be achieved. Both of the above systems can be readily converted to the new V.H.F. frequencies (35 to 72 MHZ) should these become available.

FREQUENCY MONITORS. A range of monitors for personal and club use featuring tight band circuitry and exceptional sensitivity are available from 6 to 12 switched xtal type to fully tunable with digital read-out.

PEN-CELL NI-CADS. Dry batteries seem to be getting worse every year, convert your dry set to rechargeable. Vented Cells with solder tags 0.5 amp hour £1.25 each or SPECIAL OFFER 12 for £12 save £3.00 on a full set. Waltron Dual Charger £7.88.

AVAILABLE FROM ALL GOOD MODEL SHOPS OR DIRECT FROM WALTRON ELECTRONICS LTD.

ELTHAM MODELS

54 Well Hall Road,
Eltham, London S.E.9
Tel: 01-850 4324

E. M. MODELS

42 Camden Road,
Tunbridge Wells, Kent.
Tel: 0892 36689

★ STOCK ★ SERVICE ★ ADVICE ★ MAIL ORDER ★

BILLINGS BOAT KITS

	Kit	*Fittings*
Norske Love	18.50	30.00
Spanish Galleon	12.95	11.95
Wasa	11.45	10.75
Santa Maria	8.50	4.50
Vikingskib	9.00	—
Jylland	13.75	24.45
Cutty Sark	16.25	31.50
Danmark	15.00	31.35
Lilla Dan	8.75	9.50
Dragen	10.65	10.25
Staten Yacht	18.50	9.85
Marie Jeanne	9.85	7.85
Bluenose	11.95	12.95
Hjejlen	12.95	7.95
Nordskutter C.U.X. 87	8.50	9.00
Krabbenkutter	12.95	17.00
Progress	12.75	17.25
Zwarte Zee	13.95	13.95
Mercantil	15.95	18.75
Neptune	10.00	10.75
Smit International	29.00	38.00
Nordkap	21.00	23.95
Mary Ann	11.45	14.50
New Golden Hind	20.00	23.00

COREL KITS

High quality all planked construction

HMS Victory	£91.00
La Toulonnaise	£32.48
Flying Fish	£32.40
HMS Victory centre section	£22.68

HUMBROL KITS

These are Ultra High Quality **Spanish Kits** and are complete with fittings. (For the experienced Modeller).

Felucca	£45.00
Polarca	£50.00
Harvey	£55.00
Eileen	£55.00
Rhoda Mary	£55.00

GRAUPNER KITS (Complete with fittings)

Krabbenkutter	£23.30
Elke	£36.95
Nautic	£17.98
Commodore	£27.85
Collie	£26.62
•Wiesel	£47.90
Bugsier	£52.70
•Adolph Bermpohl	£59.97
•Weser Fireboat	£77.45
New!	
•Walfangboot RAU IX Whaler	£76.25

Operational fittings for the above Graupner kits include motors, shafts couplings, props, bearing blocks and rudders.

Elke	£9.07
Nautic	£7.80
Commodore (includes two motors)	£25.02
Adolph Bermpohl (includes three motors)	£41.33
Wiesel (includes three motors)	£45.18
Krabbenkutter	£9.48
Bugsier 3	£16.83
Weser Fireboat	£32.28
Walfangboot RAU IX Whaler	£11.50

Kits for beginners and those with not quite so much time (wood construction).

P.B.M.

Leander Class Frigate	£13.95
County Class Frigate	£27.50
Paddle Steamer	£24.50
H.M.S. Sheffield	£19.95
Oil Rig Supply Vessel	£26.50

All these kits feature very simplified construction but if care is taken a very successful model can be produced – ideal for beginners.

Victorian Steam Yacht	£22.95

VERON

•Vosper Fast Patrol Boat (incl. accs.)	£43.46
Caribbean Coaster	£20.98
Titan Tug	£10.43
Deep Sea Trawler	£20.98
Veronica Yacht	£14.79
Police Launch	£10.43
•Huntsman	£31.75

MODEL AVIONICS

Huntsman 34"	£16.95
•Huntsman 46"	£28.95
Perkasa Patrol Boat 48" long	£30.00
New!	
Tradition 1/24 scale trawler G/F hull fittings inc.	£59.95

BOATS WITH FIBREGLASS HULLS

STRATOS MODELS

•Interceptor	£37.94
Dominator	£32.54
•Atlantor	£36.45

M.F.A. SPEARFISH

Fibreglass Hull & Deck. A truly quick build power boat. For up to 61 engines. Very complete	£49.95

•NEW! FANTOME

Suitable for offshore racing. For use with petrol & large engines	£49.95

MODAV PRECEDENT

Huntsman 34in	£26.95
Perkasa 49½in	£39.95
Hanseat	£45.95

VERON

Tarpon Cruiser	£27.95
Pilot Launch	£31.27

FAST ELECTRICS

Graupner Mini Speed	£16.90
Krick Avanti	£16.22
M.F.A. Piranha	£15.95
1.2 Nicads	£1.75 ea.
New Kejon Speed Controller, ideal for up to 10 amps but can accommodate 15 amps	£18.95

ELECTRIC MOTORS

Monoperm Super Special	£7.80
Monoperm Pile	£11.90
Decaperm 6v	£11.50
Hectoperm	£15.00
Cyclone	£4.95
Bullet	£14.95
Jumbo 2000	£9.65
R.S. 540 Jumbo	£5.40

RACING MODEL ACCESSORIES

Sealed Radio Box	£3.78
Servo Link Kit	£0.55
Aluminium Bearing Kit	£1.99
Prop Shaft Bearers (5 off 3/16"	£1.08
Engine Mounts – Solid	£2.40
Engine Mounts – Rubber for 3.5, 6.5 or 10cc (state Type)	£4.95
Couplings (2BA – State Motor)	£2.40
2 Pint Fuel Tank	£2.75
3 Pint Fuel Tank	£2.95
New 4 Pint Fuel Tank	£3.40
3/16"• Thrust Washers	£0.50
S Steel Rudder, Small	£1.40
Large	£1.50
Radio Hatch Cover Kit	£1.95
Engine Hatch Cover – Small or Large	£3.40
Flexible Shafts Complete	
Small	£7.95
Medium	£8.95
Large	£9.25
2BA Skeg	£1.25
Hatch Fasteners	£1.09
Tiller Arm	£0.65
Med. Flexible Shafts only	£2.82
New Gearbox for K&B or O.P.S. 3.5	£22.25

POWER PIPES & ENGINE ACCESSORIES

E.D. No. 1 Power Pipe	£6.74
E.D. No. 2 Power Pipe	£7.39
E.D. No. 2 Quiet Power Pipe	£8.78
E.D. No. 3 Power Pipe	£8.49
E.D. No. 3 Quiet Power Pipe	£10.70
Weston 3.5cc	£7.02
Weston 6.5cc	£7.56
Weston 10cc	£8.10
Weston Taipan	£7.56
Weston O.P.S.	£9.00
Mini 10 Pipe	£9.40
OPS 3.5 Quiet Pipe	£7.95
OPS 6.5 Quiet Pipe	£9.35
OPS 10 Quiet Pipe	£9.35

NEW ED. Mk. II QUIET PIPES

E.D. No. 2 size	£12.15
E.D. No. 3 size	£15.88

ARMOURED VEHICLES for RC

Leopard Tank	£110.00
XR-311 Jeep	£46.00
Cheetah Jeep	£52.00

PRECISION PETITE

P1 Drill	£10.00
P2 Drill	£18.50
S1 Stand (for P1 Drill)	£6.50
S2 Stand (for P2 Drill)	£19.50
Variable Transformer	£12.50
Flexible Shaft	£6.50
S30 Kit with 30 tools & P1 Drill	£20.00

★★ NEW ★★

Accoms. 2 channel radio control sets. Changeable crystals, very powerful servos – ideal for boats, cars & gliders.

Only £54.95 complete

TOOLS & EQUIPMENT

Whip Aerials	£1.21
2 Part Foam	£2.95
Matsushita 6v 4AH	£3.75
Matsushita 6v 8AH	£5.60
Econo 5 min Epoxy 8oz	£3.45
E.D. Filrite	£1.65
Badger 250 Airbrush	£8.50
Badger 200 Airbrush	£34.25
Humbrol Airbrush	£5.75
Badger Aircanister	£1.80
Balsa Stripper (saves a fortune in the long run)	£3.56
Badger Compressor	£69.50
David 4 Plane	£3.00
Pkt 10 Blades	£0.72
Playtron Electric Fuel Pump (uses 4 – 1½v batts. or 6v supply)	£8.30
Zap Adhesive	£1.35 or £2.25
Pratley Epoxy (very cheap)	3 for £1.60

RADIO GEAR

MACGREGOR

MacGregor 1 Ch	£45.00
MacGregor 2 Ch	£67.00
MacGregor Nicad II	£109.50
MacGregor 3 Ch. 25. Dry Batt.	£82.50
MacGregor 3 Ch. 25. Nicad	£108.00
MacGregor 4 Ch. 45. Nicad	£159.00
M.R. 12F Servo	£17.50
M.R. 12L Servo	£18.50
M.R. 15FS/Control	£29.00
10 Amp Supp. Unit	£8.80

FUTABA – NEW LOW PRICES

Futaba Medallion II (New)	£49.50
Futaba Medallion 4 Dry	£99.50
Futaba 4-4 28M Servos	£159.50
Futaba 6-4 28M Servos	£175.00
F.D. 16m Servo	£18.00
F.D. 17M Servo	£21.50
F.D. 21M Servo	£20.00
F.D. 20M Sailwinch	£60.50
F.D. 19M S/control	£45.00
F.D. 28M Servo	£12.50
F.D. 26M Servo	£20.00

SANWA

Sanwa Mini II	£64.95
Sanwa 4-4 Servos	£189.50
Sanwa 6-4 Servos	£199.50
New Stac 4+3 Servos	£99.95

N.B. – We cannot guarantee all prices shown to be correct – be prepared for price fluctuations.

★ ACCESS ★ BARCLAYCARD ★ H.P. TERMS ★ HOBBYCARD ★

CREDIT CARD HOLDERS – PHONE 01 850 4324 FOR IMMEDIATE DISPATCH OF ORDER

Opening Times
ELTHAM
10 a.m.–5.30 p.m.
Closed All Day Thursday

MAIL ORDER INSTRUCTIONS

U.K. – **50p** min. **£1.00** on kits. **£2.50** on kits marked thus*.
OVERSEAS – Send sufficient, balance will be credited.

Opening Times
TUNBRIDGE WELLS
9 a.m.–5.30 p.m.
Wednesday Close 1 p.m.

All Mail Order to Tunbridge Wells please

☆ *FOR ALL THAT IS BEST IN MODELLING . . .* **MICRO-MOLD**

MICRO ACCESSORIES

BRITAINS LEADING RANGE FOR THE R/C MODELLER

P.6. Cable to Link Adaptor

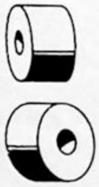
Brass adaptor 1" overall with male thread tapped to screw to our N.10/N.39. Quick Links. Rear end bored to solder fix to our 1/16" cable or can be soldered to 16 or 15g. wires.

PACKET OF TWO 24p

N.26. Nylon Retainers for 16g.

A simple and effective keeper for rod linkages. Just bend right angle on end of wire and connect to horn, servo etc. then force on retainer, tapered hole grips and stays put.

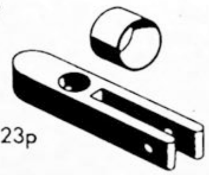
PACKET OF TWELVE 17p



MICRO-MOLD PRODUCTS
are available from your local dealer

N.10. Nylon Quick Link Clevis

The universal clevis for all connections to horns, throttle arms and servos.



PACKET OF 2 23p

Heavy Duty Servo Disc

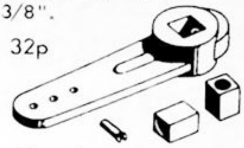
Super strength servo output disc, 3 mm. thick moulded in glass-filled nylon.

N101 to suit Futaba servos 48p
N101A to suit Trio servos 48p

N.34. Non-Slip Tiller Arm - Small

Comprises nylon arm, square brass inserts for 12 and 14 swg wire and set screw. Horn length overall 1 3/8".

PACKET ONE SET 32p



N.35. Non-Slip Tiller Arm - Large

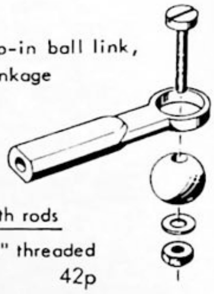
Comprises nylon horn and inserts for 8 and 10 swg and set screw. Horn length overall 1 11/16".

PACKET ONE SET 35p

N.68 Ball Joint Links

Neat and tough nylon snap-in ball link, useful for all difficult linkage connections.

PACKET OF TWO 35p



N.69 Ball Joint Links with rods

Ball links as above with 9" threaded rods. 42p

MICRO-MOLD *Station Road · East Preston · West Sussex · BN16 3AG*

H.G.H. MODELS LTD

**6 Westminster House, Kew Road,
Richmond, Surrey** Tel: 01-940 7489

STEINGRAEBER BOAT KITS

Porta Coeli	Length 19"	£15.12
De Luxe Fishcutter	Length 26"	£31.32
De Luxe Porta Coeli	Length 29"	£31.32
Agilis	Length 30"	£43.20
Fair American	Length 30"	£43.60
Marie Sophie	Length 44"	£77.76
Destroyer – Surcouf	Length 59"	£129.60
Frigate – La Corse	Lenght 39"	£112.32
P760 – Patrol Boat	Length 30"	£45.36
V.L.M. – Patrol Boat	Length 45"	£64.80
Akragas – Tug	Length 33"	£64.80
Marie Ange – Fishing Boat	Length 28"	£42.12
Catalogue		£2.50

COREL KITS

H.M.S. Victory – 1:98 scale	Length 41"	£91.00
H.M.S. Victory, centre section	Height 30"	£22.68
Le Mirage – 1650	Length 33"	£118.80
H.M.S. Unicorn – 5th rate frigate	Length 23"	£56.16
La Toulonaise – Ketch, 1823, 12 gun	Length 27"	£32.40
Wasa – Frigate, 1628	Length 35"	£129.60
La Sirene, 30 gun French Frigate, 1750	Length 33"	£58.32
Dolphyn – Dutch Ketch, 1750, 16 gun	Length 32"	£45.36
Flying Fish, 1860 Schooner	Length 29"	£32.40
Amphion 1790	Length 31"	£54.00
Catalogue		£1.80

JOHN PIPER LTD KIT

Flower Class Corvette 1/96	Length 26"	£141.30

S.A.E. for leaflet

Denny Type Steam Gunboat H.M.S. Grey Goose, Scale 1:96 .... £47.00

FITTINGS IN STOCK BY:
STEINGRAEBER, AEROPICCOLA, COREL, ART–AMB–FUSTA, AMATI, AERONAUT, MANTUA, SERGAL, JOHN PIPER.
Fittings List **35p**

BOOKS (Add 10% for postage)

The Anatomy of Nelson's Ships	£10.50
Seventeenth Century Rigging	£2.50
Steel's Art of Rigging	£6.60
Plank on Frame, Vol I	£5.70
Plank on Frame, Vol II	£6.30
Masting and Rigging Clipper Ships	£8.25
The Techniques of Ship Modelling	£4.00
The Cutty Sark – The Ship and Model	£5.00
Lusci's Handbook	£5.00
Aeropiccola Building Manual	£2.80
H.M.S. Victory in 1805	£1.25
Scale Model Sailing Ships	£6.50
Model Shipwright, Bound, 1976	£7.50
Warship, Bound, Vol 1	£9.50
Model Shipwright, No. 27–28	£2.00
Warship Issues No. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	£2.00
Modelling Thames Sailing Barges	£3.50
Warship Special No. 1 – Battle Cruisers	£2.50
Warship Special No. 2 – Super Destroyers	£2.50
Camera at Sea 1939-45	£12.00
Ships of the Past	£5.50
The Frigate 'Constitution' and Other Ships	£5.50
The Baltimore Clipper	£5.50
Scale Model Warships	£7.50

NEW

Destroyer Weapons of WWII	£7.50
The Masting and Rigging of English Ships of War 1625-1860	£20.00
Model Shipwright, Vol 1, Bound	£12.00
Model Shipwright, Vol 2, Bound	£12.00
Warship – Vol 2, Bound	£9.50
Nares Seamanship 1862	£6.50

BARCLAYCARD

ACCESS & BARCLAYCARD – PHONE IN YOUR NUMBER

All kits POST FREE UK only
Open 9.30–6.00 – Closed All Day Wednesday

Access
Buy it with Access

RACING MODELS **Winners of World Multi Racing Championships 1973 . . 1974 . . 1976 . . 1978**

NEW TYPE – RUBBER MOUNTS

We originated Rubber Mounts some years ago and they have served a very useful purpose in reducing noise levels.
However we hope we learn, as time goes by – and after a lot of research by us and the rubber makers we have designed a new type rubber mount that has many advantages over any other type made.

★ They are now universal and fit any engine.

★ They are the only rubber mounts to use the very softest rubbers, there by increasing the sound insulation to a higher degree than before.

★ They are the only rubber mounts who virtually overcome the main problem of rubbers – low frequency engine vibration periods.
With the new mounts, we have not been able to produce any engine vibration period at any engine revs high or low from 3½cc engines through to 15cc engines.

★ Very simple to install.

★ The rubbers are situated close to the engine, (this is quite wrong in terms of rubber mount technology to have rubbers spread widely from the engine).

★ The latest mounts represent the most advanced engine mounting system available.

★ At a realistic low price **£5.95 inc VAT** p&p extra.

EZEGLAZE

This is a new product for finishing the inside of your boat, making it look as good as the outside and enabling you to clean the boat very easily.
Covers virtually any colour in 1 coat – drys in half an hour with a pack free finish. It is also perfect for finishing off repairs to the outside of the boat, giving it an original finish.
Completely Fuel proof.
Price **£2.25** p&p extra.

RACING MODELS (Whitton) Ltd.

1 Melrose Ave., Twickenham, Middlesex,
England
Phone 01-894 9129

IF YOU LIKE PHOTOGRAPHY YOU'LL LOVE THIS

75p
BETTER PICTURES
■ Choose a Camera
■ Understand Your Camera
■ Choose a Lens
■ Compose Your Pictures
■ Use Filters
■ Take Portraits
■ Shoot at Night
■ Use Flash
■ Take a New Look at Glamour
■ Move in Close
■ Take Funny Pictures
■ Copy Old Photos
THE SENSATIONAL NEW NIKON EM

HOW TO TAKE BETTER PICTURES is a **Photography** Special that speaks for itself. It has been designed to tell you just that.

Millions of people spend hundreds of millions of pounds on photography every year. And yet how many really understand their cameras or know how to use them to their best?
How To Take Better Pictures answers the questions thousands of camera owners are afraid to ask.

How long an exposure should you give a night scene in a dark street?
What is the exact increase in exposure needed with close-up gear?
What specific effect do you get with different filters?
What is depth of field?
What is the ideal focal length of lens for any given subject?
How do you calculate exposure with more than one flashgun?
Why do some pictures appear better balanced than others?
What is the best combination of aperture and shutter speed for any given situation?

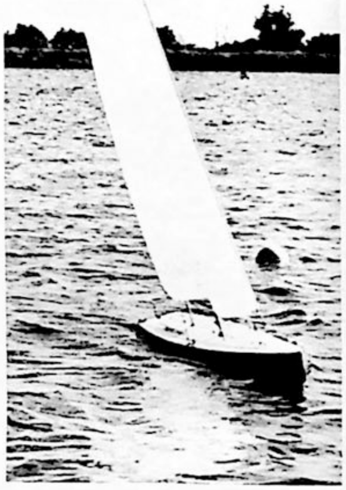
How To Take Better Pictures answers all these questions and many more besides, all in one fact-filled package.

WIN the sensational new NIKON EM
*in a contest unique to readers of this **Photography 'Special'***

How To Take Better Pictures
is available at 75p from newsagents throughout the Summer, or direct from: The Sales Office, Model and Allied Publications Ltd., PO Box 35, 13-35 Bridge Street, Hemel Hempstead, Herts., HP1 1EE. Tel: 0442 41221. Price in advance, including post and packing, 90p.

NYLET *Illustrated* CATALOGUE

Packed full with yacht fittings, sails, 10 rater and M-class yacht kits and hulls. Masts, wires, radio control equipment, sail winch and books.



Sails by Nylet
Cut for the perfect set, sewn for the perfect finish, used by discriminating yachtsmen. Choice of colours.

Fittings Deck and mast fittings include the sail flow adjuster (Jan '79 Model Boats), rigging screws, pulley blocks, wires, etc.

Nylet Aero Mast In aluminium with groove for luff cord enabling easy sail change.

Nylet Suresail Winch A fast high performance proportional unit, works direct from R/C systems. Series 2 now available.

Books on model yacht construction, etc.

Racing Class Yacht Kits
Manufacturer of the new R10R 'Scimitar'.

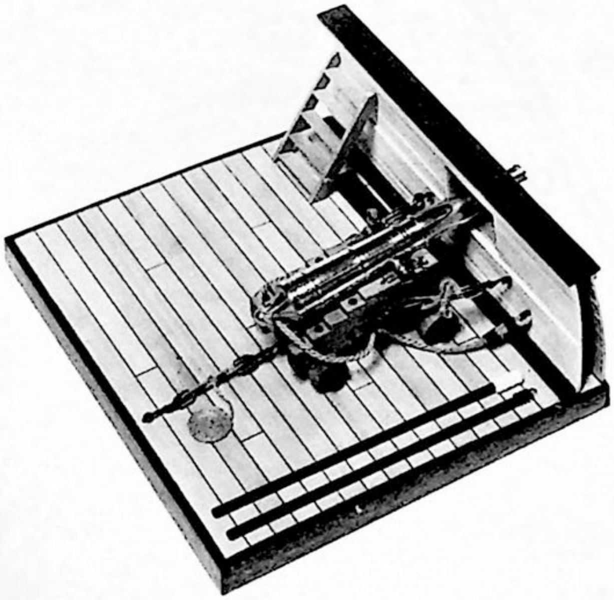
World-wide mail order
New catalogue 35p in U.K.
(stamps accepted)
outside U.K. 6 coupon-response.

NYLET LTD.
118-122 Station Road, Fordingbridge, Hants
SP6 1DG, England. Telephone: 0425 53456

MAKE A MODEL YOU CAN REALLY BE PROUD OF

Introducing a quality kit containing six different selected hardwoods, a machine-turned brass barrel and a range of brass and other fittings for making a 9-pounder naval gun (c 1775) set on a ship's deck.

1/24 scale Overall Measurements:– 6¼" wide; 5⅞" deep; 3" high.



The hardwoods included have been cut with hollow-ground blades and require limited further sanding.

The base of the model is pre-shaped to allow for the camber of the deck.

The cheeks of the gun-carriage have been cut from one piece of pearwood to their exact size.

The breeching rope has been specially made on a miniature rope-walk.

The barrel is 4¼" long and has been turned from solid brass. The breech, reinforce rings, astragals etc are all carefully detailed.

The trunnion clamp is a solid pressing from 1mm thick brass and is punched to allow for the eye and joint bolts.

The kit contains all other brass parts needed to complete a really detailed model, including hooks, eye-bolts, rivets, fine chain and solid brass cannon balls.

DETAILS OF HARDWOODS USED

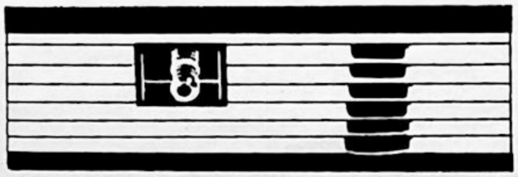
PEAR	– Gun carriage, ladder and wale.
HORNBEAM*	– Inner and outer bulwarks.
LIME	– Deck planking.
SAPELE†	– Frames for bulwarks.
EUROPEAN WALNUT	– Rail, waterway and steps on outer bulwarks.
AFRICAN WALNUT	– Surround for base.

** A heavy white wood, with a fine texture.*

† Like African mahogany, but with a finer texture.

The kit also includes wooden blocks; cord and thread to complete the tackle; black paper for imitating the deck caulking; material for making a realistic sponge; Danish oil for giving an excellent finish to the darker woods; Lubrisil paper for a dead-smooth, final finish; glue; and, of course, detailed plans. **In fact, everything you need except the actual tools.**

Bromley Modellers' Supplies Ltd.,
45 Beadon Road, Bromley, Kent BR2 9AS.



View from the front.

AT £13.00 (including postage), THE KIT REPRESENTS OUTSTANDING VALUE – ORDER NOW WHILE STOCKS LAST.

To: BROMLEY MODELLERS' SUPPLIES LTD.,
45 BEADON ROAD, BROMLEY, KENT BR2 9AS.

I am enclosing a cheque/postal order for £ ....

for .... 9-pounder gun kit(s).

Name .... USE

Address .... BLOCK

.... LETTERS

Readers offer SPECIALS

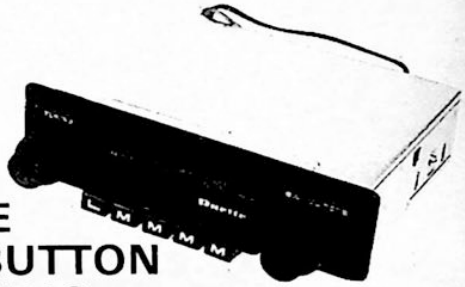
Super Bargains especially for our readers

TASCO BINOCULARS

Powerful 10 × 50 Binoculars with fully coated lenses. Comes complete with lense covers, vinyl carrying case and straps. Essential for the outdoor person.

Normal price £32.95

Our Special Price £29.95



DUETTE PUSH BUTTON CAR RADIO

Dual polarity, 12v DC working Car Radio with audio power of 5.5 watts. Tunes 185-575 metres medium wave, 970-2000 metres long wave. Size 6.9 × 1.8 × 6 in. overall, comes complete with installation kit.

Normal price £29.95 **Our Special Price £25.95**

DUETTE PORTABLE CASSETTE PLAYER

Portable solid state Cassette Tape Recorder with automatic stop. Operates from dry battery DC power source or mains AC. Size 9.5 × 5.25 × 2.5 in. overall, comes complete with ear piece and AC mains lead.

Normal price £29.95

Our Special Price £26.95

TRAVEL CASES

Nest of three beautiful leather-look vinyl soft sided Cases 24", 26" and 28". Zipper closing and secured with tough buckle fasteners. Can be stored inside each other when not in use.

Normal price £43.40 **Our Special Price £39.50**

Please supply the following Readers Offer Specials:

- ☐ TASCO BINOCULARS
- ☐ DUETTE CASSETTE PLAYER
- ☐ DUETTE PUSH BUTTON CAR RADIO
- ☐ TRAVEL CASES

N.B. OUR PRICES INCLUDE POST, PACKING AND V.A.T.

(Please write in BLOCK CAPITALS)

Name..

Address..

....

....

....

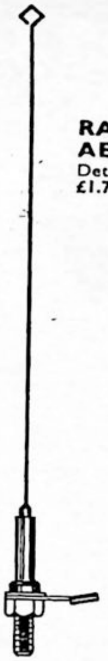
N.B. (i) Please make cheques, etc., payable to Model & Allied Publications Ltd.
(ii) Allow 21 days for delivery.
(iii) Goods found to be faulty will be replaced immediately.
(iv) Please add 20% to our Special Prices if outside the U.K. Delivery could be up to 8 weeks.

M.B.

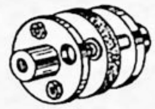
MAP Model & Allied Publications Ltd

Dept. EO, 13/35 Bridge Street, Hemel Hempstead, Herts. HP1 1EE. Tel: (0442) 41221

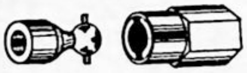
IRVINE MARINE ACCESSORIES



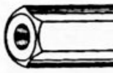
RADIO AERIAL
Detachable
£1.75



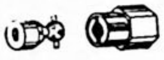
FLEXIDISC COUPLINGS
Popular type of coupling, available to fit most engines £1.25



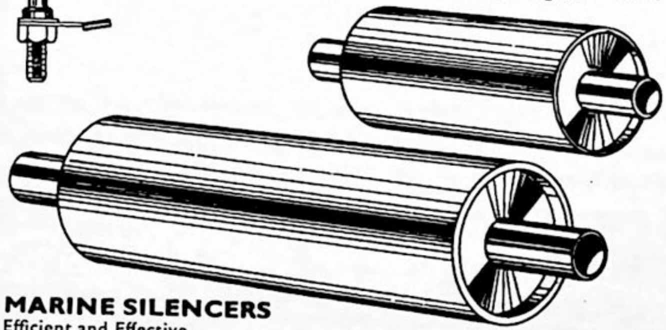
HEAVY DUTY BALL COUPLINGS
Precision made coupling, with needle bearing, available to fit most engines £1.35



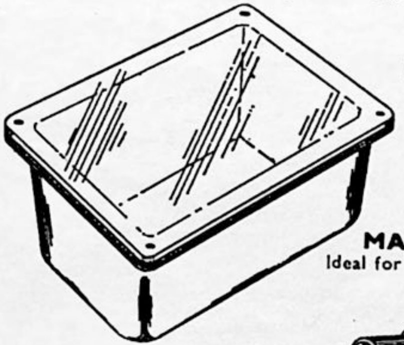
SHAFT ALIGNERS
Designed to ensure accurate alignment of engine and propshaft ... £0.55



MINI BALL COUPLINGS
Miniature version of our popular HD coupling—available to fit most engines £1.10

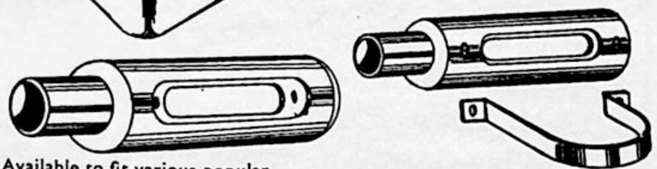


MARINE SILENCERS
Efficient and Effective
Medium ·19-·35 cu.in. £3.15 Large ·40-·60 cu.in. £3.65

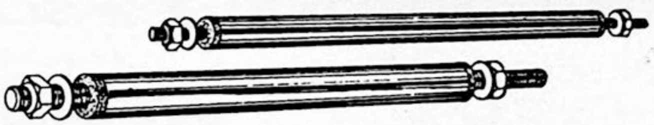


RADIO BOXES
Medium Size
£3.25
Large Size
£3.50

MARINE MANIFOLDS
Ideal for coupling to tuned pipe or remote silencer.

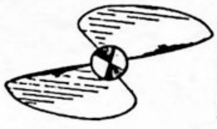


Available to fit various popular engines ... ... £1.50-£1.95



PROPSHAFTS

6in. 4BA	£0.78	6in. 2BA	£0.82
7in. 4BA	£0.82	7in. 2BA	£0.86
8in. 4BA	£0.86	8in. 2BA	£0.90
9in. 4BA	£0.90	9in. 2BA	£0.94
10in. 4BA	£0.94	10in. 2BA	£0.98
11in. 4BA	£0.98	12in. 2BA	£1.06
12in. 4BA	£1.02	13in. 2BA	£1.10
13in. 4BA	£1.06	17in. 2BA	£1.30



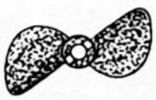
RADIO-ACTIVE WATERSCREWS

35mm X type 2 or 4BA	30p
40mm X type 2 or 4BA	31p
45mm X type 2 or 4BA	33p
50mm X type 2 or 4BA	34p
55mm X type 2BA	40p

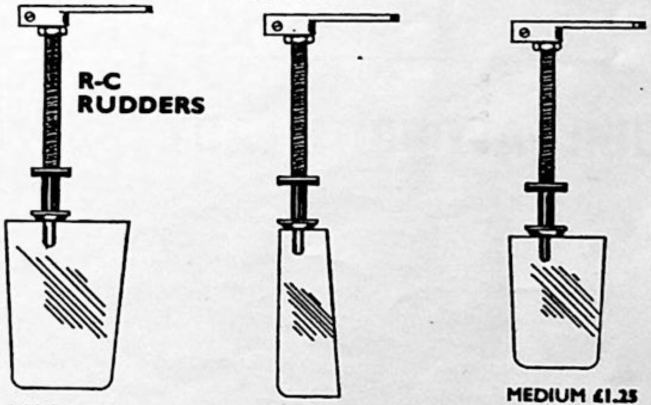
RADIO-ACTIVE GLASS FILLED NYLON WATERSCREWS

35mm X type 2 or 4BA	39p
40mm X type 2 or 4BA	42p
45mm X type 2 or 4BA	44p
50mm X type 2 or 4BA	84p
55mm X type 2BA	55p

STOP PRESS Standard range now available - see your dealer



J.G. BERYLLIUM COPPER PROPS
High quality racing props with dog type drive. Available in sizes from 1½in.-2in. ... From £4.35-£5.25
3-bladed £6.25.

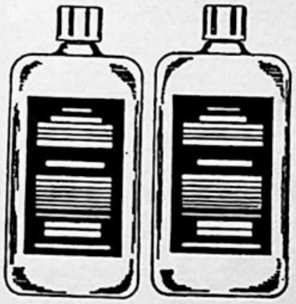


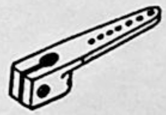
R-C RUDDERS

LARGE £1.25

SMALL £1.25

MEDIUM £1.25





TILLER ARMS
$\frac{1}{4}$in. or $\frac{3}{16}$in. Shaft 25p

BUOYANCY FOAM LARGE TWIN PACK £1.95

IRVINE ENGINES LTD.
Unit 8, Alston Works, Alston Road,
High Barnet, Herts.

NEW PIRANHA . . . .

High speed mini powerboat for MFA Hummingbird '15' or '20' Electric Flight Packs

Now the superb convenience and performance MFA's electric flight power packs (about ten minutes high speed running and then recharged in 30 minutes from a car battery) in a brand new boat specially designed for them. Absolutely ideal for racing as there is no waiting for engines to be started! The kit includes a light white glassfibre hull and deck, vac-formed superstructure, prop shaft, coupling, prop, whip aerial, brass rudder, PVC rubbing strip, ply parts, servo linkage and other hardware, transfers, full size plan and instructions. Because the hull is glassfibre, the boat will accept .09-19 diesel and glow engines with little modification. Pt. no. 379. Price **£15.95** inc. VAT.

Power Pack to suit: Hummingbird 15. Pt. no. 228. **£25.92** inc. VAT
Hummingbird 20. Pt. no. 289. **£27.35** inc. VAT

model flight

Model Flight Accessories

THE MILL, MILL LANE, WORTH, DEAL, KENT CT14 0PA. Tel: Sandwich 2132 (STD 03046)
Send 49p for fully illustrated catalogue.

OUR FAVOURITE LADY . . .

Amps Miss Enfield

The Amps Miss Enfield is a 1/[illegible]th scale model of the famous Don Shead design that achieved success in full size offshore racing in the late sixties. It is one of the few large hulls currently available with room enough to accommodate petrol engines, and is ideally suited to the high powered Glow motors of 10–15cc. It has a deep V hull, is 48in long and has 13in beam - big enough to carry four pints of fuel or more if you wish! In our opinion, Miss Enfield is a serious contender for B or C class offshore events, both timed and endurance, and will be seen at many racing venues next season, not least those of the newly formed Westward Offshore Model Power Boat Racing Association. The Amps Miss Enfield fibreglass hull and deck/superstructure costs **£37** plus **£2** carriage and is available ex-stock from **The Offshore Specialists . . .**

Graber models

15 Abbey Road, Torquay, Devon. Tel: 0803 211656
Evening enquiries Tel: 0803 558346

HADLEY HOBBIES

CITY GRAND PRIX SPECIAL

Produce this ad – save 15% on any R/C car kit and R/C outfit in stock.

SPECIAL OFFERS

VERON COBRA 17	£43.00
REVELL SB 7 GLIDER	£40.00
GRAUPNER MOSQUITO	£30.00
MULTI-PLEX SIRROCCO	£25.50
HEIGI SKY LAB	£54.00
PILOT CHIPMUNK	£20.00
PILOT KITTY R1500	£33.00
SVENSEN FLYBOY	£34.00
MARATUKA CORSAIR	£41.45
MARATUKA BEECH-STAGGER WING	£50.00
BOATS	
GRAUPNER WOLFGANG RAV	£40.00
GRAUPNER BUGSIER TUG	£30.00

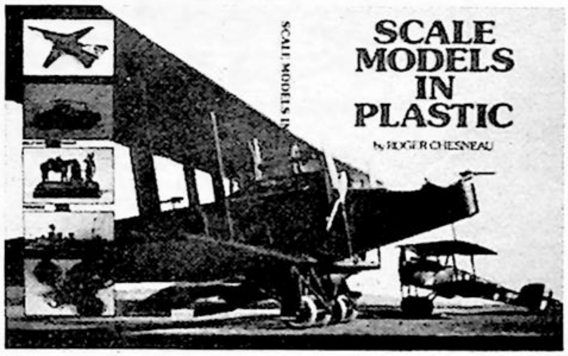
131 Middlesex Street, Bishopsgate, London E1
Close to Liverpool Street Station
Tel: 01 283 9870

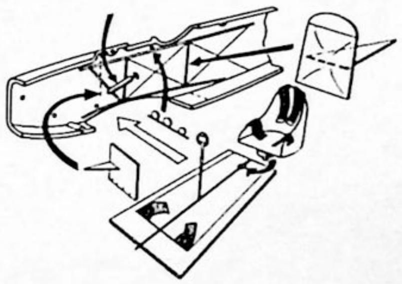
OPEN SUNDAY 9.30 a.m. – 2 p.m.
MONDAY – FRIDAY 9.00 a.m. – 6 p.m.

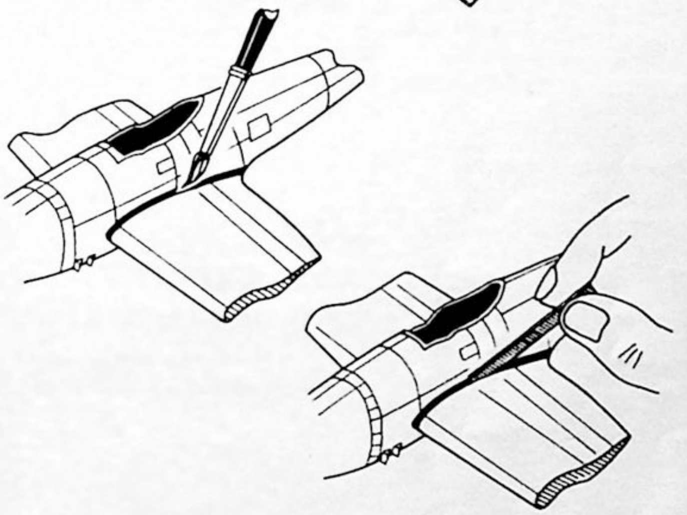
We specialise in assisting first time R/C modellers and overseas visitors, personal and postal exports tax free.

LONDON'S BEST KIT SELECTION
Boats – Cars – Helicopters – Gliders – Aircraft
Barclaycard – Access – American Express – Diners Club – Eurocheque – Master Charge

Conway Maritime Press





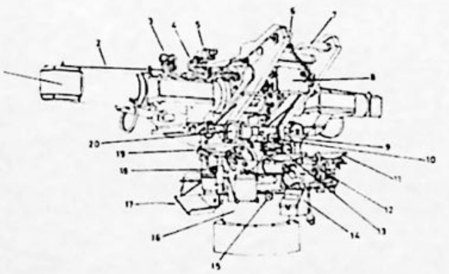


SCALE MODELS IN PLASTIC

Roger Chesneau

The third in the highly successful 'Scale Model' series, this book fulfils the need for a general manual of techniques in the growing field of plastic models. Every aspect of the hobby is covered and the chapters on general procedures are backed with specialist sections on aircraft, civilian vehicles, military equipment, figures and ships, contributed by a team of acknowledged experts. Illustrated with 'how-to-do-it' diagrams and photographs of the finest models.

April £7.50 (plus 50p p & p). 192 pages ($9\frac{1}{2}$" x $7\frac{1}{4}$"). 150 photographs, 100 line drawings. ISBN 0 85177 139 4.



DESTROYER WEAPONS
OF WORLD WAR 2
By PETER HODGES and NORMAN FRIEDMAN

DESTROYER WEAPONS OF WORLD WAR 2

Peter Hodges and Norman Friedman

The third title in the 'Warship Special' series is casebound and the format has been greatly expanded to allow a detailed comparison between British and US destroyer armament – not just the guns, torpedoes and A/S weapons, but their mountings, directors, control systems and electronics. Illustrated with photographs of ships and their weapons and detailed line drawings.

March £7.50 (plus 50p p & p). 192 pages ($9\frac{1}{2}$" x $7\frac{1}{4}$"). 150 photographs, 100 line drawings. ISBN 0 85177 137 8

Sailing Ships of War
1400-1860

SAILING SHIPS OF WAR 1400-1860

Dr Frank Howard

The wooden warship during the period 1400 to 1860, from the advent of the three-masted ship to the eclipse of sail as the principal mode of propulsion – a work of the greatest value to ship enthusiasts, modelmakers and naval historians. The most accurate illustrations, and not the merely picturesque, have been chosen from a large and international selection.

May £12.50 (plus 75p p & p). 256 pages ($11\frac{3}{4}$" x $9\frac{1}{2}$"). 150 photographs, 32 colour plates, 100 line drawings. ISBN 0 85177 138 6.

Conway Maritime Press

2 Nelson Road,
Greenwich,
London SE10
Telephone
01 858 7211

robbe

The newest boat kits

By the time this news appears in the magazine these super models will be at your Model Shops.

To all our customers who placed orders early, we are sorry for the delay, but we are sure that you won't be disappointed.

Order No. 1077
"REMBERTITURM" OIL RIG SUPPORT VESSEL. Overall Length: 1203mm. Beam: 245mm. Weight: 14 Kg. Draught: 90mm. For electric power.

Order No. 1058
"BUSSARD" River patrol boat. Overall Length: 900mm. Beam: 210mm. Height: 320mm. Draught: 50mm.

Order No. 1043
"CASCADE" Fast sports boat. Overall Length: 645mm. Beam: 210mm. Weight: 1650gm. For high power electric propulsion.

Order No. 1070
"NEWPORT" A 2 channel R/C yacht. Overall Length: 820mm. Overall Height: 1200mm. Mast Height: 940mm. Beam: 120mm. Total Sail Area: .22dm Total Weight with Keel: 2800gms.

Don't forget the firm favorites, Hamburg 11, Bonny, Piraus F.L.8., Cap Domingo and B. 25.

See these and other kits from 'robbe' at your model shop. For a colour catalogue send a 9" × 6" envelope and 10p in loose stamps. (U.K. Only)

EURAPEX LIMITED

P.O. BOX 106, FOREST, GUERNSEY, C.I. TEL: 0481 65061.

RECHARGEABLE SEALED

BATTERIES

EXTENDED RANGE

TRADE ENQUIRIES NOW WELCOME

SEALED NICKEL CADMIUM BATTERIES [WITH VENT]

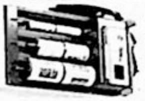
Heavy duty. Fully sealed. Rapid charge discharge. 1·25 volts. OR

for lighter duty: REPLACE dry cells with their rechargeable equivalents in calculators, radios, tapes, torches, etc, etc. (N.B. A dry cell, nominal 1·5v, drops to 1·25v or below when in use.)

Capacity amp/hrs.	*Weight gms*	*Replaces dry cell type*	*Price inc. VAT*	*Matching charger*	*Charging holders 1 cell £*	*4 cell £*	*6 cell £*
0·5 Ah	25	HP7 size 'AA'	**£1.50**	65mA **£6.98**	0·40	0·50	0·50
1·2 Ah	50	•HP11 Sub'C'	**£1.78**	140mA **£7.97**	0·40	0·80	1·60
2·0 Ah	78	HP11 Size 'C'	**£2.72**	250mA **£7.97**	0·40	0·80	1·60
4·0 Ah	150	HP2 Size 'D'	**£3.56**	450mA **£7.97**	0·40	1·57	2·98
0·09 Ah	Not Vented	9v PP3	**£4.98**	9mA **£5.95**			
0·5 Ah		9v PP6	**£11.74**	50mA **£7.97**	See 9v PP batteries below		
0·45 Ah		9v PP7	**£9.16**	45mA **£7.97**			
1·00 Ah		9v PP9	**£12.48**	100mA **£7.97**			

•Slightly smaller than size C. (All prices inc. VAT)
Please say when ordering if cells are required with solder tags or not. (Not PP's.)

MULTICHARGER



Charge 2 or 4 or 6 HP7's or HP11's or HP2's or mixed combinations e.g. 2 HP11's and 4 HP7's simultaneously. Automatic charge and size adjustment. Price £12.95 inc. VAT.

2 VOLT SEALED LEAD-ACID

2·5 Ah
HP2 size
'D' 2·0v
181 gms

5·0 Ah
not std. size 2·0v
369 gms

RAPID CHARGE/DISCHARGE
Spiral coiled Max-Area plates for heavy duty applications. Twin spade terminals. 100 amp peak from 2·5 AH cell. Charge a 10 volt pack (5 cells) by direct connection to a 12 volt battery. No special leads needed. 30 min. charge replaces 90%. 60 mins. replaces 100%.
Trickle charge at 250 MA and 500 MA for 14 hours.
PRICE inc. VAT: 2·5 Ah £3.39. 5·0 Ah £5.44 each.

RECEIVER NICADS (4.8v) UPRATED

from 225 to 250 mAh. **£3.88** inc. VAT
from 500 to 600mAh. **£7.26** inc. VAT.

No size change from originals.

BOOKLET. *Nickel Cadmium Power, plus Catalogue* £1.25. All you need to know about Nickel Cadmium cells, their behaviour, application, graphs, do's and don'ts, rapid charging etc. Please send SAE for rapid return.

NEW

Rapid charging resistances Charge 4, 5 or 6 cell packs of 2·0, 1·8 or 1·2Ah (state which) from 12 volt battery in 20 minutes. Complete with heat sink, fuse, croc clips and charging data and graph. **PRICE £3.99** including VAT.

CHARGING TIMER

15 amp switching. Clockwork run-back time switch. Select any charging time from 2 mins to 2 hours 2 min graudations.
PRICE £4.98 inc. VAT

★ NEW ★ REVOLUTIONARY

CHILD'S ELECTRIC CARS

Range 2-4 miles on one charge. Formula I type with spoiler, and others. SAE for details.

MAIL ORDER. ADD 10% post & package. (5% for orders £25.00 & over)
Send SAE for full lists. Mail Order and Enquiries to:
All prices include VAT

SANDWELL PLANT LTD. Dept MB, 2 Union Drive, Boldmere,
SUTTON COLDFIELD, W. MIDLANDS B73 5TE. Tel: 021-354 9764
See full range at T.L.C., 32 Craven Street, Charing Cross, London WC2
and at 2 Union Drive

BOOKS FOR THE MODELLER FROM THE MODEL BOATS INTERNATIONAL BOOK SERVICE

MODEL BOOKS

INFORMATION AND ORDER INSTRUCTIONS
PLEASE READ CAREFULLY

All orders should be accompanied by payment and sent to Aeromodeller Reader Service, Modelbooks, Bercourt House, 51 York Road, Brentford, Middx. TW8 0QP, England. Cheques and postal orders should be made payable to Albion Scott Limited.
Overseas customers: Please send payments in British currency by international money order or bank draft. Your books will be sent by surface mail, but we will quote airmail costs if required.
Please enclose 25p postage for orders up to £1, 50p up to £2 and 75p thereafter.
Callers welcome. Open 9.30 to 5.30 Mon.-Fri. We are next door to the Brentford Nylons Tower, Great West Road

Trade and Export Enquiries. All books available to trade at discount. Please contact our Trade Manager.
Send stamps value 10p for ONE or More of the following lists. Showing 100's more titles.
AIRBOOKS – books about aircraft and aviation. SEABOOKS – books about ships and maritime. WARBOOKS – books about warfare, weapons, soldiers. MODELBOOKS – books about modelling. MOTOBOOKS – books about motor vehicles.

Telephone and Mail **Orders accepted on Access, Barclaycard** **Tel: 01-560 3404**
Money Back: If you are not entirely satisfied with your book(s), you will receive your money back if you return your book(s) within *7 days*.
You can use this ad as an Order Form.
Visit our Midland Branch, 7 Welch Gate, Bewdley, Worcs, now open – Mon.-Fri. 9-4.30. Sat. 9-5.
All books reviewed in this publication can be ordered from us.

New and Recommended

BOATS OF THE UNITED STATES NAVY 1960 – A photo album of navy boats with accompanying illustrations to a scale of 1/8″=1′ 0″ plus boat specifications. 104pp. P/b. **£3.95**
THE GAZELA PRIMEIRO – A history of this magnificent sailing ship which began life possibly as a whaler in the waters off the Portuguese Azores, to its life today. Many b/w photos with pull-out profile, 40 pp. **£2.95**
SIDEWHEELERS TO NUCLEAR POWER – A PICTORIAL ESSAY COVERING 123 YEARS AT THE MARE ISLAND NAVAL SHIPYARD – Since 1854 Mare Island has built 513 ships, Here is the history of one of the largest and oldest Naval Shipyards in the USA. 240pp. Over 260 photos. **£9.95**
DESTROYER WEAPONS OF WORLD WAR TWO – A detailed comparison between British and American destroyer armament – a book which is liberally illustrated with over 150 photos of typical ships and their weapons plus highly detailed line drawings of guns, directors and equipment. 192pp. **£7.50**
GUNS AT SEA: THE WORLD'S GREAT NAVAL BATTLES – This book covers naval history from the Battle of Sluys in 1340 to the battle of Midway six centuries later, There are many b/w and colour photos plus charts and battle plans, 160pp. **£4.95**
MAN O'WAR 1 COUNTY CLASS CRUISERS – This is vol. one of a new series of warship monographs in which each book is devoted to a famous class of warship of the WWII era. Full of fine photos and informative text, there are also scale and deck plans, plus colour swatches. 57pp. **£4.50**
WARSHIP INTERNATIONAL No. 4, 1978 – A quarterly publication devoted to naval topics. In this edition are feature articles on Cruisers for Argentina; U.S.N in WWII (pictorial) and the regular features include Naval News in Pictures; Naval Intelligence and Ship's Library to name but a few. Approx. 100pp. with many b/w photos. **£2.25**
PICTORIAL HISTORY OF THE GERMAN NAVY IN WORLD WAR II – This is an extremely readable book which charts the development of the Navy accompanied by more than 300 photos, 366pp. **£9.95**
ONI 54 SERIES: BOOKLETS ON U.S. NAVAL VESSELS AND BATTLESHIPS. Each booklet contains many b/w photos with relevant information. **each £2.50**
Titles currently available; 54-CV US Carriers; 54-D US Destroyers; 54-B US Battleships; 54-C US Cruisers
GERMAN NAVY CAMOUFLAGE OF WORLD WAR 2 – the first complete record. 144pp. 190 photos and colour drawings. German/English text **£8.00**
DREADNOUGHT: A HISTORY OF THE MODERN BATTLESHIP (PS) **£7.50**
Kokufan Naval Books – excellent pictorial volumes. Paperback **£5.25 each**
THE JAPANESE NAVY IN WW2
THE NORTH VIETNAMESE FORCES
LAST DAYS OF THE KRIEGSMARINE **£1.95**
THE GERMAN NAVY IN WW2
(Japanese captions)

THE BEST OF SAIL. Fine collection of Jack Spurling's sailing ship paintings, accompanied by Basil Lubbock's authoritative text. 192 pages s/b **£9.95**

MERCHANT SHIPS IN PROFILE I. PSL, P&O, Orient & Blue Anchor Lines. Actual fleet lists in date order, includes every vessel owned. 150pp, 250 illustr. **£4.95**
DICTIONARY OF SHIPS OF THE ROYAL NAVY OF THE SECOND WORLD WAR. PSL. Guide to 2000 warships with full statistics for each ship listed. 192 pages **£1.95**
Maru Graphic Special Series – large paperbacks with hundreds of superb photographs, plans etc., much unknown material. Covers only World War 2 period. Japanese captions. Excellent value at **£3.95.**
No. 1 Battleship Nagato & Mutsu; 2. Aircraft Carrier Akagi & Kaga; 3. Battleship Fuso & Yamashiro; 4. Heavy Cruiser Chokai & Maya; 5. Light Cruiser Agano type & Oyodo; 6. Aircraft Carrier Shokau & Zuikaku; 7. Destroyer Tokugata (Special type) Vol. 1; 8. Heavy Cruiser Furutaka & Kako; 9. Battleship Kongo; 10. Heavy Cruiser Mogami & Mikuma; 11. Aircraft Carrier Shoyo & Hiyo; 12. Battleship Ise; 13. Submarine I go (Type I); 14. Heavy Cruiser Ashigara; 15. Battleship Hiei; 16. Aircraft Carrier Ryujyo & Hosho; 17. Destroyer Tokugata (Special type) Vol. 2; 18. Heavy Cruiser Myoko; 19. Destroyer Asashio type & Akizuki type; 20. Battleship Haruna; 21. Destroyer Tokugata (Special type) Vol. 3; 22. Heavy Cruiser Suzuya & Kamano; 24. British Aircraft Carriers; 25. American Cruisers; 26. British Cruisers; 27. German Battleships; 28. British Destroyers; 29. World Battleships (excl. British, American and Japanese); 30. German Cruisers; 31. American Destroyers; 32. German and Italian Submarines; 33. British, French, Russian Submarines; 34. American Submarines.
BATTLESHIP DESIGN AND DEVELOPMENT 1905-1945 – The first layman's guide to the design process, the factors which governed the development of capital ships, and the reasons why battleships were built in a particular way. 176pp. 200 photos, plans and diagrams. Conway Maritime Press **£8.50**
THE MASTING AND RIGGING OF ENGLISH SHIPS OF WAR 1625-1860 – The first modern study of the whole era of sail for which firm evidence is available, including the hitherto 'dark ages' of the mid-eighteenth century. Lavishly illustrated with drawings and 100 photos. This book also has an easy reference section with full index. An indispensable book which we recommend, from Conway Maritime Press. 272pp **£20.00**
DESTROYERS WEAPONS OF WORLD WAR TWO – The third title on the 'Warship Special' series has been greatly expanded to allow a detailed comparison between British and US destroyer armament. Illustrated with photos of ships and their weapons and detailed line drawings. 192pp 150 photos. **£7.50**
DESTROYERS – Anthony Preston. Over 340 illustr. 224pp. **£4.95**
THE ROMANCE OF SAIL – Michael Leitch. 128pp with 50 colour and 100 black-and-white illustr. **£1.99**
US NAVY IN WORLD WAR TWO – Samuel Morison. 192pp with 20 colour and 250 black-and-white illustr. **£4.95**
STRATEGY AND TACTICS OF SEA WARFARE – Marshall Cavendish, 84pp. Well illustrated **£2.95**
GAFF SAIL – A ready source of information on this well loved breed of craft, covering small working yachts to huge trading ships. A well illustrated book with many photos. 144pp. Casebound from Argus books **£5.50**

Model Radio Control
MODEL SAIL AND POWER BOATING BY REMOTE CONTROL **£1.80**
RADIO CONTROL MANUAL 2nd Ed. (Safford) **£1.80**
ADVANCED RADIO CONTROL (Safford) **£3.60**
RADIO CONTROL HANDBOOK (McEntre) **£4.95**
MODEL RADIO CONTROL (Safford) **£1.30**
All W. Foulsham-Tab editions.
HANDBOOK OF MODEL CARS AND BOATS – The latter section includes R/C submarine; Whalecatcher; Air Boat and Sailboat. An Arco publication with many photos and drawings **£3.55**
CORNISH SEA LIGHTS – The last book of David Mudd's 3 part glimpse of Cornwall past and present. p/p. Many b/w photos **75p**
THE LAKE CARRIERS – an illustrated history of the Great Lakes fleet. 192pp **£9.95**

SOMETHING VERY SPECIAL! Sailing Ships on old postcards. This superb collection of 610 postcards depicts European sailing ships of the 19th and 20th centuries. Available in this country for the first time, the collection is a genuine collectors item. German Text. 200pp £25.00

WARSHIPS OF THE ROYAL NAVY – a new and well illustrated guide, with technical specifications, to Britains modern naval force. Macdonald and Jane's. 133 photos. 136pp **£5.95**

FROM ORION BOOKS
JAPANESE NAVY AIR FLEETS – an excellent pictorial boxed volume of the air fleet's history. Hardback. 320pp. 252 illus. £29.50
PASSENGER SHIPS PAST AND PRESENT – famous ships of the world from the 19th century to present day. Well illustrated history. English/Japanese text. 276pp. 244 illus. £24.95
DESIGN AND CONSTRUCTION OF THE YAMATO AND MUSASHI – an 'inside story' of how these most powerful battleships ever built in the world and their use during the last war. 370pp. 60 illus. 64 photos. 12 charts. £19.95

THE ILLUSTRATED HISTORY OF PADDLE STEAMERS ON LAKES AND RIVERS £14.95
A BRIDGE ACROSS THE SEVEN SEAS – the illustrated history of the famous Holland-America Line. Hundreds of illustrations, in colour and b/w **£6.95**
SOVIET MERCHANT SHIPS, a detailed record. 100s of photos **£6.00**
MERCHANT SHIPS IN COLOUR – Blandford Colour Series **£1.80**

Submarines
THE U-BOAT WAR ('Der U-Boat Krieg') is the most sensational photo record of the U-boat war ever published. In 205 superb pictures the author, former U-boat war correspondent, shows the dramatic life under the sea and in war. A bestseller in Germany, A MUST for every U-boat fan **£14.95**
THE BRITISH SUBMARINE – by Comm. F. W. Lipscombe. A complete illustr. history. 288pp, 66 photos, 2 plans. (Conway Maritime Press) **£6.50**
U-VII. GREY WOLF OF THE SEAS. Pictorial history. German text. p/b **£1.95**

Ship and Boat Modelling
MAP Modelling books – the leading series for ship modellers.
MACHINERY FOR MODEL STEAMERS **£1.50**
THE CUTTY SARK – THE SHIP AND A MODEL, 496pp, incl. many plans **£5.00**
THE ANATOMY OF NELSON'S SHIPS, 183 drawings, 12 plans, 76 ill. **£10.50**
17TH CENTURY RIGGING – 146pp, 250 illustrations and plans **£2.50**
MODELLING A TUDOR SHIP – 76pp, 45 drawings **£0.60**
BOAT MODELLING – a comprehensive how-to-book, over 250 ill. **£1.25**
POWER MODEL BOATS – a complete guide how to model, 250 ill. **£1.75**
MODEL RACING YACHT CONSTRUCTION, 128pp, approx 200 illustrations **£1.75**
MODEL BOAT PROPELLERS – all design detail, well illustrated **£0.50**
SECRETS OF SHIPS IN BOTTLES **£1.00**

MAIL ORDERS :- MODEL BOATS READER SERVICE, MODELBOOKS, 51, YORK ROAD, BRENTFORD, MIDDLESEX, TW8 0QP

ALL POINTS

Club of the Month
Bury Metro Marine Modelling Society

Publicity officer Bob Rudworth provides the following information:

In the summer of 1975 a number of model boat enthusiasts were meeting on a casual basis at Townside Fields Park, in the centre of Bury. They decided to form themselves into a club, with the object of organising regattas and other activities.

The Local Authority was approached for the use of the ornamental lake in the park. The Authority agreed, and issued permits to the members.

Sailing continued at the park until the beginning of the 1978 season, when work began on the nearby railway station. This made access very difficult and eventually sailing became even more difficult when the contractors removed the water from the lake!

After consultations with our very helpful Local Authority, we were given permission to use the water at 'Clarence Lido' (off Walmersley Road, Bury), where we now sail every Sunday morning. We are not permitted to use i.c. boats at this venue because of nearby houses and the local hospital.

The club caters mainly for scale modellers and we have a wide variety of fishing vessels, warships, tugs and cargo ships. Rumour has it that there may be a submarine or two lurking in the water this year. I hope they're friendly!

The membership has now risen to around the thirty-five mark, and club nights are held on the first Wednesday of every month at The Mosses Community Centre, Bury, when we have film shows, talks by guest speakers or maybe just a pint or three. During the summer months from June until August, the monthly meetings begin at the park, when we have evening sailing.

Regattas arranged for this year are:

29th April: The Den-Herder Scale Trophy;
27th May: The Alan Brown Scale Steering and Docking Trophy;
19th August: The Open Scale Regatta.

New members are always welcome; address to write to is: 152 Market Street, Tottington, near Bury, Lancs.

* * *

Society and Club News

Although a number of brave souls battled against the gale force winds at Wyken Slough, Coventry, on 25th March, it was eventually necessary to cancel the first National Duplex 575 Ocean Racing Yacht Championship. The event is rescheduled for 3rd June, at the same venue, commencing at 10.30am, and we hope for better conditions.

* * *

The Tyneside model boating fraternity of the Heaton and Tynemouth Model Boat Clubs invite fellow enthusiasts to take part in their two day regatta to be held on 9th June at Paddy Freemans Park and 10th June at Tynemouth Park. Saturday events are for straight running and nomination, whilst Sunday will cater for straight running, tethered hydroplanes and radio control scale. MPBA rules will apply and boiler certificates will be required for steam powered vessels. Further information can be obtained from Stuart Davidson, 21 Athol Gardens, Whitley Bay, Tyne and Wear, NE25 9DN.

* * *

Competitors for the 3rd Annual 2 Hour Race on 17th June at Loch Ceo-Glais, hosted by the Highland Model Club, can be sure of a warm Scottish welcome at this unclassed radio control multi-race regatta. Five one hour heats will determine the qualifiers for the two hour final. All finalists will receive a prize and 1st prize is £100, 2nd £50, and 3rd £25. Entry fee is £2 and contact is The Model Shop, New Market Hall, Inverness.

* * *

The radio control open regatta listed in the MPBA calendar, published in March issue, hosted by North Birmingham club at Witton Lakes on 5th August will cater for radio control Naviga speed and steering competitors.

* * *

Just time to mention the special event for deep vees and radio control hydroplanes on 27th May at the Wessex model boat club's lake, Marley Water, Hatch Pond Road, Nuffield Industrial Estate, Poole. Boats eligible for deep vee must have a hull of scale or semi-scale form, i.e., *Cigarette, Huntsman,* etc. Hydro class will allow inclusion of tunnels and cats. The event will be run to American style rules. At the same venue there will be a 1 hour endurance event on 5th August for A, B, and C classes; pre-entry to Paul Firmin, 53 Parkwood Road, Boscombe, Bournemouth, Dorset, BH5 2BS.

* * *

Date change for Cambridge model boat club's multi-race event at Arc Gravel Pits, Meadow Lane, St Ives, Huntingdon, from 8th July *to* 1st July.

* * *

Also a change for the multi-race regatta organised by Eastbourne club at Princes Park Lake, Eastbourne. New date is 9th September, *not* 10th June as originally published.

* * *

*Harvey Middleton of **Duplex Craft** prepares to launch at the abortive Championship Regatta which had to be called off in gale force winds. Resail is now on 3rd June; details below.*

Another date change is the all-electric radio-control regatta at Walpole Park, Gosport, hosted by Gosport MPBC. New date is 4th August rather than 8th July. Events are for F1 and F3, (speed and steering), starting at 11.00am. Mains charging facilities and refreshments will be available.

* * *

Turning to scale model events, just time to mention the Thames Shiplovers and Ship Model Society, whose Annual Rally of scale model ships will take place on 3rd June at the Round Pond, Kensington Gardens, starting at 10.30am.

* * *

The Liverpool Model Power Boat Club's special event for tugs only at Walton Hall Park is on 10th June and each boat is promised approx. 30 minutes on the water to perform tug-like manoeuvres. Astern, full and half ahead plus a towing hook are necessary requirements for success. The boats will be judged statically, with a special prize for models constructed from kits. Further information from C. Broadbent, 16 Brereton Avenue, Liverpool, L15 6TJ.

* * *

A unique presentation of Paddle/Screw and Sailing Ships of prototype design, supported by Steam Traction Engines, will perform at The Prince of Wales Pond and Pondside, Blackheath, London, SE3, on Saturday 9th June, 1979 at 14.00 hrs. Trophies will be presented, after the Show, for the best model in the Judges' opinion, present. The Show is one of the major events of The Greenwich Festival, and is organised by The Paddle Steamer Preservation Society, Models Section, London and Home Counties Branch. The Band of The Lambeth Sea Cadet Corps will perform during the Show sponsored by The Greenwich Arts Council. Any owner of a steam model traction engine, of prototype design, and hand built will be very welcome to take part, also owners of paddle steamers and other prototype ships. This is a family show where everyone enjoys themselves.

The organisers cannot be held responsible for non-appearance of models, weather conditions or other circumstances.

* * *

One of our most popular plans is the *Will Everard* Thames Sailing Barge and it is a continuing pleasure to see the number of these fine vessels still in sailing trim. Readers may like to note dates of the sailing matches this year, and the best vantage points.

Further information concerning the Thames Barge Sailing Club is obtainable from the secretary, Mr D. S. Dunsmore, telephone 01-481 3681.

Medway	2 June	Gillingham Pier and Strand, Sheerness
Blackwater	16 June	Heybridge, Stone
Blue Circle	23 June	Gravesend (start), Southend, Pin Mill
Pin Mill	30 June	Pin Mill, Shotley
Swale	18 August	Harty Ferry, Seasalter
Southend	25 August	Southend Pier
Greenwich	26th August	Greenwich
Colne	1 September	Brightlingsea

TEST BENCH

New Products

WE FIRST saw the narrow boat kit in prototype form at a Pontin's Craft Week at Prestatyn in May '78, designed and built by Roger Wilding, proprietor of **Modelcraft,** Leicester. Vac-formed polystyrene hulls were available at the end of '78 and now we have a complete boxed kit. As stated, the hull is in two halves, moulded in black, which simply need glueing together with polystyrene liquid cement after the various windows, hatches, etc. have been cut out against the templates provided. The joints, top and bottom, are reinforced with a strip of polystyrene supplied. Fore and aft decks are in ply which need planking with the mahogany veneer, the same but thicker material being used for doors and hatches. Small brass fittings such as portholes, lights, towing bollard and horn are included. A prop shaft (not supplied), could easily be fitted, together with motor, batteries, and radio-control. A useful inclusion is a number of full colour paint schemes, which are shown on the reverse of the instruction sheet, and on the box lid, plus paints and glue. A somewhat different model; retail price is £12.95 inc. VAT from model shops or direct from **Modelcraft.**

* * *

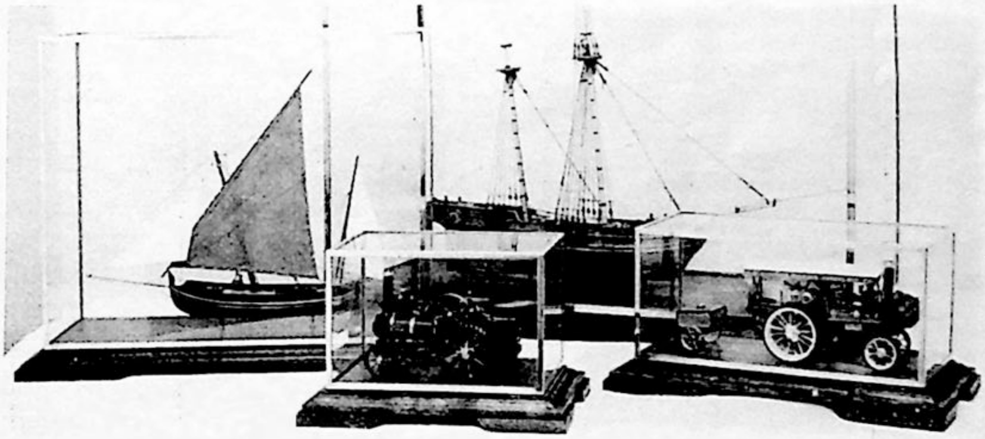
In this space age era, one has become relatively blasé about some of the miraculous technological spin-offs such as mini-computors, solar cells and Teflon coated frying pans! Teflon is, of course, a type of PTFE, and its main claim to fame is an extremely low co-efficient of friction. Until fairly recently, PTFE could only be applied by a sophisticated manufacturing process, but now a system has appeared which claims to enable anyone to make use of this product's ice-like low friction qualities. In a base fluid there are suspended millions of micron size particles of PTFE, and its application to any surfaces which need lubrication is as simple as using the conventional oil can. The name of this product is **Triflon,** and a 60 pence, 10cc container, should last a long time, as only drops need to be applied to the contact surfaces. We have tried **Triflon** on two electric motor shafts/bearings and in both instances a rise in rpm of over 10% was recorded. Other obvious applications are i.c. motor bearings, drive shafts, lathe beds, cutting tools, mould releasing, etc. – in fact any area where there is moving metal to metal contact. **Triflon** is available from **Racing Models Ltd,** 1 Melrose Avenue, Twickenham, Middlesex.

* * *

With the now almost universal use of rubber mounts for internal combustion engine installations in model boats, there remains the problem of dispersing the heat that is retained in the whole engine/exhaust manifold because of the insulative property of rubber preventing conduction through the hull bottom. One method of assisting this removal is to watercool the silencer assembly by direct injection or by copper pipes wrapped around the manifold and silencer – usually looking a bit like a plumber's nightmare. A neat solution for Merco 61 owners is the water cooled marine manifold pictured here, manufactured by **Irvine Engines.** The unit is machined from a light alloy casting, rebated to match the engine exhaust outlet. Two fixing screws and allen key are supplied. The ¾in long exhaust pipe connector is 11/16in diameter to suit ⅝in diameter silicone tube and the ⅛in long water inlet and outlet tubes measure 3/16in diameter. Price is £7.96 plus VAT.

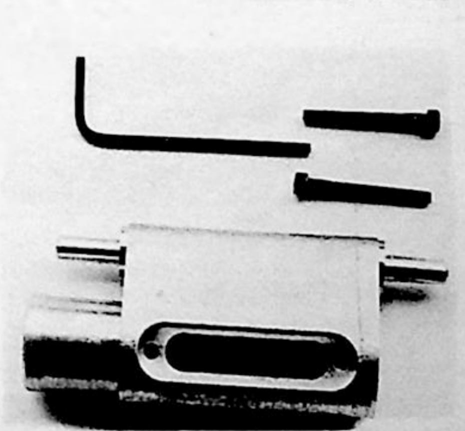
* * *

A good model deserves a good case. Anyone who has visited the Model Engineer Exhibition will no doubt have noted the large number of excellent models, worth hundreds of pounds,



MODELCRAFT
ROGER
5
NARROW BOAT
MODELCRAFT

Above, *cases in a variety of sizes, available to order from* **Brymond.** Left, **Modelcrafts'** *canal boat kit makes a change from the usual tugs and trawlers.* Below, *a water cooled exhaust manifold for the Merco 61 from* **Irvine Engines.**



poorly displayed in tatty or unsuitably sized cases. A new supplier of quality units is **Brymod,** 34 Belvedere Road, Charminster, Bournemouth, Dorset. They are hand made by a repected modelmaker to sizes quoted by the customer. A general specification has base constructed from Utile Mahogany with reverse mitred legs and with green beize underneath to protect any surface it may stand on. The cases are made of ¼in or ⅜in brass angle, all joints silver-soldered and polished; glass being generally 3mm for smaller sizes and 4mm for larger. The examples viewed are of excellent quality, and being individually made, obviously demand major investment, but in relation to a well-made model, the protection and enhancement of the subject must be strongly borne in mind when weighing up the pros and cons. The cases depicted range in price from £35 for the smallest, 5¼ x 8¾ x 5¾in high, to £100 for the sailing ship, 11¼ x 27½ x 24in high.

PRINT OUT

New Books

A revised edition of R. Griffin's *Model Racing Yacht Construction,* published by Argus Books Ltd. is now available at £2.95 net, UK only. Measuring 8in by 6in, its 120 pages contain a mine of information for the beginner, and the not-so newcomer concerning construction of model yachts. The bulk of the book was originally published as a series in *Model Boats* in 1970–71, and follows a very practical approach with many illustrations. There are sixteen chapters, each covering a specific subject, i.e. different types of hulls, keels, fittings, sails, steering gear, balancing, tuning, etc., and a new chapter on making g.r.p. hulls for modern style radio controlled boats, plus some information on radio installation. A useful appendix on Simpson's rule, centre of efforts, buoyancy and material weights and an index completes a thoroughly recommended book. Whilst primarily intended for the newcomer to racing yachts, much of the information is of value to sports yacht constructors also.

MAIL BOAT

Readers' Letters

Scale Fidelity re *Eileen*

Dear Sir,

I read with interest David Osbaldstone's review of *Eileen* kit in Feb. issue, and wonder if he could clarify a couple of points.

The photos on page 119 show the boat with an extraordinary shaped hollow waterline aft at level of load waterline and at the rubbing strake, and I wonder if this was the shape given when the frames were fitted to the keel, or were they shaped by the reviewer.

A glance at any of the craft of this type, or in fact any fishing boat with a cruiser stern will show that the waterlines aft at this draft are rounded and not hollow, in the UK that is.

Another mystery to me is the little gaff on the mizzen mast; the hoisting arrangements must be unique. One halyard is shown at the throat and another out at the peak, with no lead to the mid-section of the gaff where there would be most weight if a mizzen sail was bent on.

I am sorry to take Mr Osbaldstone to task on this one, but by his admission in the text, the kit is for a more experienced builder, which presupposes the modeller will have a certain familiarity with the type of craft, or be at least looking for realism, and I assume this is the market the producers of the kit are aiming at.

It despairs me, and I would imagine some of my fellow contributors of drawings to *Model Boats* as well, to spend hours on study of builders' drawings and full size ships and other research in order to produce plans which can honestly be said to represent a named ship or class, to see some of the monstrosities that are turned into kits, purporting to be a certain vessel or type.

This is not the old kit versus scratch built controversy. Many kits are excellent, and at times only lack authenticity due to problems of manufacture and production, but at this scale and method of manufacture there should be no excuse for any inaccuracy, and we should differentiate between models and toys.

I may have stirred a hornets' nest with this one; if so, let's hear what other readers think.

James A. Pottinger
Aberdeen

David Osbaldstone, reviewer of the Humbrol *Eileen* kit, replies:

I must admit the camera doesn't lie, it only exaggerates; perhaps it's because it's a fishing boat!

The 'extraordinary shaped hollow waterline' to quote Mr Pottinger's words, is not nearly as pronounced as it seems to be in the picture. The shape is given by the frames and is not shaped by me. Also his comments on the gaff rig are not quite correct. The gaff is rigged as per plan, and after further consultation with colleagues having access to information on the actual craft, I understand that this is how it should be. (Eileen was first published in *Model Boats* in March 1963, and a photograph of the type of prototype vessel *Eileen* was based upon shows the hoisting arrangements as per the MAP plan and Humbrol's kit. Perhaps Mr Jewitt, the designer of our plan, would care to comment on this somewhat unusual hoisting arrangement – Ed.)

I should perhaps explain how I approach reviewing kits. Very few true scale modellers, and the operative word being 'true', build boats from kits, part of their interest being the research for information. Therefore, on this basis, I assume that the majority of kits are bought by those who have little time or perhaps interest in research, and are mainly interested in how the boat looks and functions. To this end I build the kits as detailed or instructed, without any special tools or equipment.

My reference to 'not being suitable for the inexperienced modeller' was due to some adverts propounding otherwise, and the lack of full instructions; hence I felt that anyone who had only tried his hand at the ABS hull type kit could land himself with a great many difficulties. I did not mean that the modeller has to have the necessary know-how on the workings of a boat.

I am sure that Mr Pottinger will not agree with these views, but I try to cater for the majority of modellers who are likely to buy kits.

David Osbaldstone
Maidstone, Kent

Eaglewall Ships

Dear Sir,

As a 1/1200th ship fan I was quite pleased to read Ray Rimell's fine article on Eaglewall ships in your magazine. I should like to add some information and disagree with a few of Mr Rimell's points.

Regarding the *Gneisenau,* this was bagged and was Eaglewall's last kit. *Admiral Hipper* was released; however I have never seen it bagged. The one in my collection is boxed with poor artwork, practically a copy of the artwork on the *Tirpitz* box.

Mr Rimell lists *Scharnhorst* as part of series 6, and as having been produced. *Scharnhorst* was part of series 7, the Battle of the North Cape. In fact in some instances, series 7 was titled by Eagle, 'The Sinking of the *Scharnhorst'*. However, I have never seen an example of this model, nor have the numerous other collectors I correspond with. If the *Model Boats'* collection, or your readers have proof of this kit's existence, I would welcome it for a booklet I am writing on 1/1200th ships. I would welcome information on a bagged *Hipper* as well.

I must disagree with Mr Rimmell about *Ajax* and *Achilles.* Admittedly the *Bismarck* was a poor kit. The Leander class cruisers, though, built up into good models. The Eagle Leanders had two poor points; their 4in mounts were moulded directly to the deck, and the distinctive Leander funnel was poorly done. The 6in turrets, bridge detail and overall shape were all good however.

Regarding the fate of the Eagle moulds, reports are that Pyro and later Lifelike received them. This has never been confirmed, and my numerous letters to both companies have been ignored. Pyro and Eagle did have some type of exchange programme. Pyro released 8 models, *Prince of Wales, King George V, Dorsetshire, Norfolk, Warspite, Victorious, Bismarck* and *Prinz Eugen.* These are identical to the Eagle kits but are moulded in a very brittle blue plastic with much flash. The Pyro kits were issued in boxes larger than Eagles', and with totally different box art. Pyro also released US and Japanese ships of their own design, which are still available through Lifelike.

I would welcome corresponding with any of your readers on the subject of 1/1200th ships, and would offer photo copies of instruction sheets and box art of Eagle and Pyro kits to those interested. 1/1200 ships in plastic are few. Perhaps articles like Mr Rimmell's will give the impetus to companies to release more ships in the scale. Thank you for your fine magazine and for a chance to express myself. I am sincerely,

Mark Grossman
61–30 214th Street, Bayside, New York, 11364,
U.S.A.

S.S. Great Britain

Dear Sir,

I read with interest your recent article on the model of *Great Britain.* This ship has come to the forefront in our studies recently, which are aimed at assessing past, and possible future wind driven ship performance.

It may not be known to many of your readers that in fact the vessel spent most of her working life as a three masted square rigged craft. In this mode she was outstanding on the Australian run. Her average speed of 9.3 knots makes an interesting comparison with that of the much later *Pamir* at 5.6 knots.

J. R. Flewitt
Director Wolfson Marine Craft Unit,
University of Southampton

NEW MAQUETTES (BY PIERRE FROMENT)

Nürenberg 1979 release. Harbour tug "Akragas". Length 32in. Beam 8½in. Scale 1:30. Ideal for Radio Control with electric or small steam units.
This superbly pre-cut plank-on-frame 25 meter class harbour tug comes with the following ingredients utterly pre-cut throughout. Fittings in brass, aluminium and plastic include: anchors, winches, bollards, davits, boat, running lights, hook, compass firehose, lifebelts, doors, windows, skylights, ladders, rudder, liferaft containers, name plate, masts, etc . . . full scale plan with diagram to ensure easy build.
Full English instructions.

PRICE £65.00 including VAT

ACCESS OR BARCLAYCARD
— JUST PHONE YOUR NUMBER

EURO-MODELS

P.O. BOX TK6 TWICKENHAM TW1 2JD
01-891 0342 (MAIL ORDER TO:)
35 CROWN ROAD, ST. MARGARETS,
TWICKENHAM, MIDDLESEX

All kits FREE POST UK only.

Overseas rates on application on all catalogues and kits.

Full Steingraeber cat. £2.50 post paid UK only.

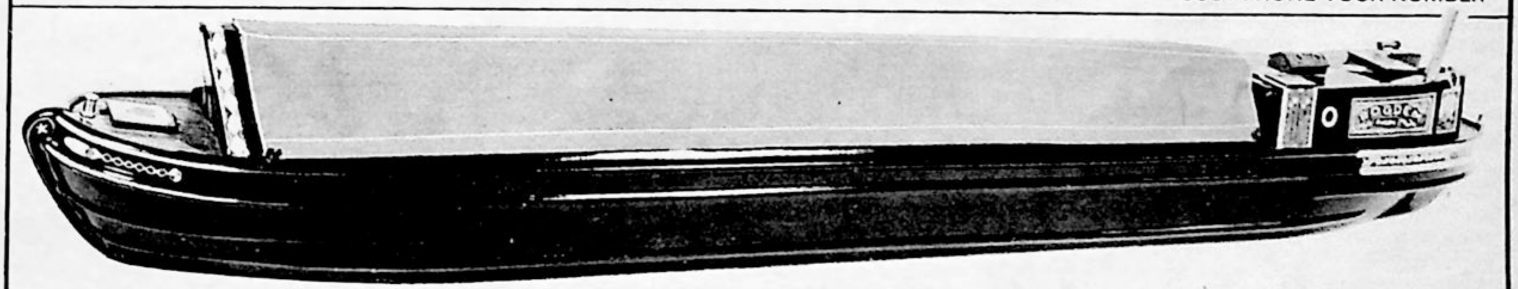
UK Distributors for . . . AEROPICCOLA . STEINGRAEBER . MANTUA . AERONAUT . AMATI . SERGAL . MOVO . COREL . SAITO . HINODE

MODELCRAFT

5 CROSS ST., BLABY
LEICS., ENGLAND
Tel. 0533 771397

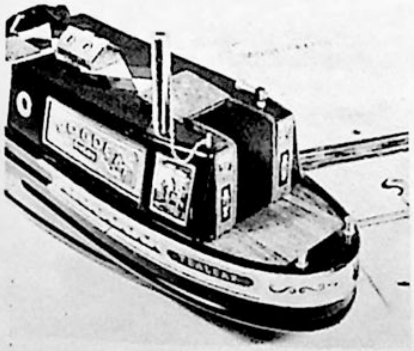
STUART TURNER
STEAM ENGINE CATALOGUE
60p incl. of postage
Call at the specialist shop or try our same day mail order service.

SHOP OPEN: 9-6 Mon-Sat.
Closed all day Wednesdays
Hobbycard
JUST PHONE YOUR NUMBER



INLAND WATERWAY'S NARROW BOAT KIT

Length 33" Beam 3½"



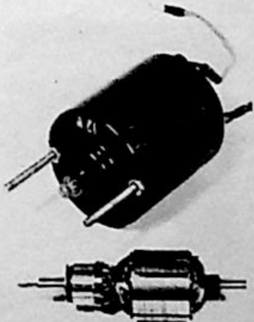
The kit includes pre-moulded hull and superstructure in two parts, plus all Deck fittings in Brass and White Metal, Mahogany Veneer and strip for hatches and decking, plywood for bracing and fabric for completion of the Cargo Area.
Simple and quick assembly with illustrated full colour instructions for painting. A superbly attractive display model, suitable for conversion to Radio Control.

Kit £12.95 p&p 75p
TRADE TERMS AVAILABLE.

FANTASTIC VALUE

6 volt to 12 volt motors, 10 pole armature. Self aligning end-bearings. Thermal cut out, reversible. 3mm output shaft, overall length, 4in., diameter 2¼in. Normal amperage on load 5 amps. Ideal quality motor for larger boats, etc.

£3.50
p&p 45p



Our bi-monthly multi-race column

SPRAY RAILS

Hosted by Roger Burrell

WELL, if it keeps raining like it has been we will have no shortage of water this year, so much so that I, perhaps like you, have been restricted in testing our new hulls and set-ups, apart from one early competition when it was a dry sunny day. I'm fed up with drying myself and my equipment. That's boating! Anyway, as soon as the summer arrives who will want to even think back to the early season.

Vernon Hadley covered the early competition at Northampton on Sunday 11th March, and here is his report:

The boating season is under way at last, at least in the Midlands anyway. Avon Model Boat Club held their first Open competition at Becketts Park, Northampton, which is some 10-15 minutes drive off the M1, junction 15 or 16. The pool is a somewhat unusual shape, but it's good to see the course is sensibly positioned using the water to its best advantage. Toilet facilities are available, just a 3 minute walk from the pool; also a small cafe about the same distance.

The event itself was very well supported, with six Midland clubs present, plus Wigan, Mansfield and District MBC, Penarth Wales, and Saxon's. It's good to see such well known personalities as John Stidwill and Ray Yates giving their support to a small Midland club so early in the season.

The day's events began at 10 o'clock with 3 heats of 'A' class, which with 7 boats in each heat, provided close competition. This was followed by the first heat of the 'B' class before breaking for lunch. During the lunch break T. Littlewood gave a preview of John Stidwill's new prototype 10cc hull, which I must admit was extremely fast, a boat I feel sure we shall see much more of. With everyone fed and watered, back to the serious business of heats 2 and 3 of 'B' class, with 8 boats in each race, Avon's commentator Pete Williamson doing a fine job informing the spectators of the proceedings, and advising them not to go away, as the 'C' class boats would be travelling at 38-40 mph! Such was his enthusiasm I could hardly wait to finish my own 'B' class race. Seriously, though, it's high time the public were given more information on things like what to look for, and what it costs, etc.

Jason Wilkie pictured with his 3½cc multi-boat. See story on page 355.

With Bill O'Gara, the Midland favourite, in a little trouble in heat 1, it looked as though Ray Yates competing in heat 2 was running away with it, lapping very impressively in 22/23 secs. even in traffic, although a bit noisy. However, with 2 heats left, and plenty of good boats yet to perform, it was by no means over. Saxon's Ray Yates on 70, Brian Pullham on 65.2 from heat 1, and Jim Wilkie on 64 from heat 3, the final heat looked like being a cracker. However with only 2 laps completed John Stidwill gave the rescue dinghy a terrific shove with his *Jumbo*, but with only 3 minutes lost John was soon on his way again, and entertaining the crowd with some super barrel rolls, only to retire shortly after, so it was left to the 'Sunburnt Kid' Mick Fields to come home with 65.5 laps to take 2nd place from B. Pullham. A final word of thanks must go to the Avon Club for a well organised event, which only ran over 30 minutes due to the lack of response for requests for lap counters. Prizes were presented, with additional gifts of 'after-shave', supplied by Avon Cosmetics. Results below.

Your first multi boat – Alpha – Part 1

Jim Wilkie covers in detail building a model power boat, which is aimed, primarily at the newcomer to multi boat racing. It will of course be of great assistance to the fun boater who wishes to build a GRP (glass reinforced plastic) hull. Over to Jim:

I decided to build an 'A' class (3½cc) multi boat for starters, as I think too many people come into multi racing with the more powerful 6½cc and 10cc boats. They then hurtle around the course, causing all sorts of problems and aggro at the poolside, simply because they have not had the experience to handle such fast, and very often hairy, machines. Anyway, that is another story, but I would welcome any views you might have on this rather delicate subject.

The next move was to decide which hull to use. After a lengthy discussion with my three colleagues, it was decided as I had one anyway, to build an *Alpha 20*.

My skill and patience as far as building models is concerned, is very limited. So whenever I can I purchase as many bits as are available, providing of course, that they are of the quality and strength that I require. They can all be obtained from any good model shop. The only part used which is not available commercially, is the engine plate, although **Weston** have now brought out a similar type plate.

A Class					
1st	B. O'Gara	Veco	*Bullet*	Coventry	59
2nd	M. Hillman	OS	*Phantom*	Coventry	57
3rd	K. Blears	KB	*Alpha*	Wigan	55
B Class					
1st	V. A. Hadley	Webra	*Laser*	N. B'ham	65
2nd	R. Burrell	Webra	*Laser*	N. B'ham	62
3rd	R. Folland	OS	*Jag Mk 2*	Leic.	58
C Class					
1st	R. Yates	Rossi 65	*Jumbo Jag*	Saxons	70.4
2nd	M. Fields	Webra 61F	*Cougar*	Avon	65.5
3rd	B. Pullham	Webra 61F	*Silak*	Coventry	65.2

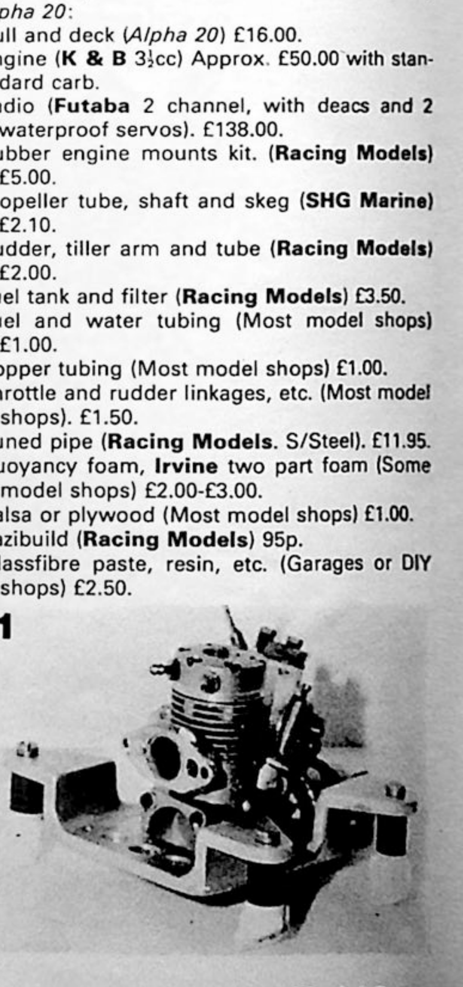
The reason for this more rigid type engine plate was the fact that the crankcase on my **K & B** was cracking, and breaking the lugs. In all I broke three, before reverting to the (N. Jones' special) one I use now. See figure 1. How much of this breakage is due to the **K & B's** separate front housing isn't plain, but I would recommend glueing the front housing with epoxy or **Loc-tite** if separate plates are used. On the new **K & B's** the crankcase seems to be a lot meatier, but I would still advise it be glued!

If you decide on the standard type engine plates, I would recommend the **Racing Models'** rubber mounts kit. This is the one I use on all my boats, and I have never had any problems with any other engines, even my 10cc ones. (See later in this month's *Sprayrails* a new improved engine mount kit from **Racing Models**.)

The following list and prices are an approximate guide to the sort of cost you might expect to pay. A wide choice of supply is now available from a variety of manufacturers, however, I list below the products used in construction of my *Alpha 20*:

Hull and deck (*Alpha 20*) £16.00.
Engine (**K & B** 3½cc) Approx. £50.00 with standard carb.
Radio (**Futaba** 2 channel, with deacs and 2 waterproof servos). £138.00.
Rubber engine mounts kit. (**Racing Models**) £5.00.
Propeller tube, shaft and skeg (**SHG Marine**) £2.10.
Rudder, tiller arm and tube (**Racing Models**) £2.00.
Fuel tank and filter (**Racing Models**) £3.50.
Fuel and water tubing (Most model shops) £1.00.
Copper tubing (Most model shops) £1.00.
Throttle and rudder linkages, etc. (Most model shops). £1.50.
Tuned pipe (**Racing Models**. S/Steel). £11.95.
Buoyancy foam, **Irvine** two part foam (Some model shops) £2.00-£3.00.
Balsa or plywood (Most model shops) £1.00.
Eazibuild (**Racing Models**) 95p.
Glassfibre paste, resin, etc. (Garages or DIY shops) £2.50.

1



Shaft aligning tool (Can be used on future boats) 75p.
Coupling (**Racing Models**) £2.75.

If you decide to make such items as the fuel tank, rudder and post, etc., all well and good, but be sure they are made good and strong. They will soon be tested on the hustle and bustle of the British multi racing scene, and you don't want them letting you down in the middle of an important race.

Also, you may want to use a different hull or engine. Again, this is okay but be sure you know what to buy. Seek advice from your fellow club members, as a mistake in choice can be very expensive in the long run. If you are not in a club I would advise you to join one as soon as possible. It could save you some considerable heartache in the future. An enquiry and sae to this magazine will give you the secretary's address of your nearest club.

One other thing before getting down to the nitty gritty of building our first multi racer. The reason for rubber engine mounts? Well, quite simply, without going into any detail, it's to help us keep the noise generated by the engine down to a minimum. In any case, to be able to race with our new boat, it must be under 80db at a distance of 10 metres from the bank. This is the official noise limit set by the Model Power Boat Association (MPBA) of Great Britain.

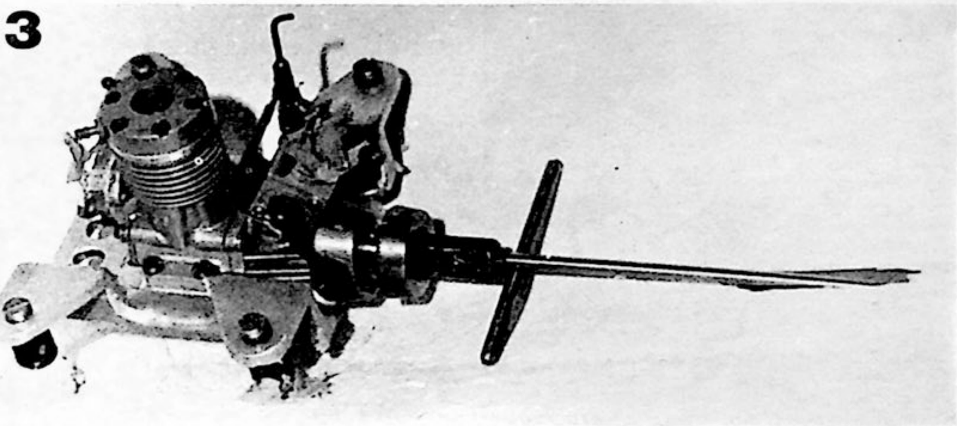
When you have purchased the hull of your choice, sit down and study the diagram or plan given with the hull until you fully understand the measurements and positions of all the components and fittings. If there is anything that is not quite clear to you seek advice before commencing your forthcoming project.

Installation of Engine

Without doubt, the most important stage of building any model power boat is the installation of the motor and this is the first step we have to undertake. Bolt the engine plates to the engine mounting lugs, after drilling the plates to suit your motor. This is quite an easy job if you follow the instructions given with the kit of your choice. In the case of the **Racing Models'** kit, a full explanation and diagram sheet is given with each set of mounts. The four mounting feet are then attached using the plastic spacers in place of the rubbers themselves, figure 1. This ensures no misalignment due to the give of the rubbers. Again, it is only a matter of following the instructions given. Now fit the shaft aligning tool (solid coupling) to the motor. These are very cheap, but well worth having, as true alignment between the shaft and engine is of the utmost importance. Also, make sure that all nuts and bolts are nice and tight, to avoid any movement between plate and engine. A slot now has to be cut where the prop tube leaves the boat. The measurement is usually shown on the setting up instructions. A little tip here, when you have worked out where the slot is to be file a flat on the vee of the hull. This will then stop the drill from slipping and scratching your hull. It is then a simple job of filing out the slot to the required size. I always make it slightly larger, so that when lining the shaft up it does not bind on either side of the slot. Now screw the shaft onto the solid coupling, figure 2, and place the engine into position. To achieve the correct angle, shape the mounting feet until the shaft is within a couple of degrees of being the correct angle. I always put my engine and flywheel as low as possible in the boat, as this helps the hull to be more stable, particularly in rough water conditions. Don't forget of course that you have to slide the starting cord under the flywheel, so not too low!

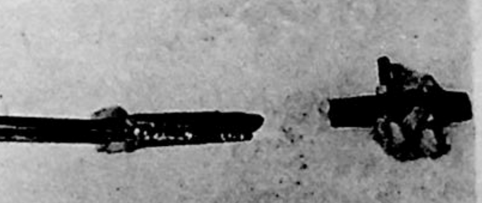
2

3



At this stage roughen the area where the engine is to be mounted with a wire brush or similar, to give better adhesion for the filler paste. I also roughen the bottom of the mounting feet with a file. Now to the difficult bit, actually fixing the engine into position. Firstly, mix some ordinary car filler paste and place onto the bottom of the four mounting feet. Then carefully place the engine into position, with the shaft coming out of the slot in the bottom of the hull. At this point, do not put the shaft tube in place, only have the shaft screwed onto the solid coupling. Now check for true alignment, and make sure that the shaft, when looking from the rear of the boat, is dead in line with the centre of the hull. To help get the engine and shaft at the correct angle, I use old offcuts of 2 BA shaft. These are placed under the flywheel or rear of the engine, depending on which way the angle needs to be altered, see figure 3. The filler paste I use for initial tacking in is **Isopon 38**. This does not go off too quickly and gives you plenty of time to set the engine in its proper position. When all is correct make sure that each mounting foot has enough paste to tack it to the hull. Then check again! Remember, this first stage of building your multi boat will determine, more than any other single item, how your boat will perform, i.e., speed, turning ability, stability, etc. One other point worth a mention is the mixing of filler pastes and resins. Do not, under any circumstances, put too much hardener in the mix. Although this speeds the curing time it can also pull and distort the hull bottom, and again, it can have drastic results on the performance of your boat. When the paste has gone off hard, check to make sure everything is correctly positioned and in line. If all is okay the fixing in place of our shaft tube is the next consideration. I favour the flexi-shaft, but because this article is primarily being written for beginners to multi racing I decided to fit a 2 BA solid shaft. The shaft and skeg I have used were manufactured by **SHG Marine**. Although the skeg is made from some type of plastic, it is quite robust and strong. You must also decide now on the type of coupling to use, as the distance between the end of the flywheel and the end of the prop tube will have to be determined. Before fitting the tube make sure the aligning tool is the same length as the coupling to be used. If it isn't, the solution, quite simply, is to fit some packing washers onto the shaft until the required length is obtained. To give the skeg extra support, I screwed 2 4 BA bolts to it. See fig 4. Now tack the shaft and skeg into position and again check for true alignment, figure 5. At this stage I always add colouring to my resin mixes. This helps to give a better finish inside the hull. Next, put masking tape around the tube and skeg, where they leave the boat bottom. This holds the resin in position and saves some rubbing down afterwards. I always use Eazibuild for final fixing of the shaft and skeg. With a small screwdriver I ensure that the Eazibuild, mixed with the same colouring as the hull, is pushed

FIG. 4 SKEG



5

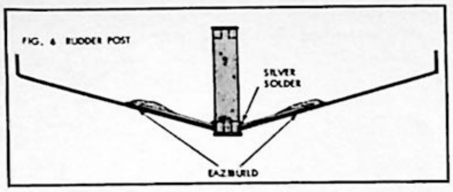


FIG. 6 RUDDER POST

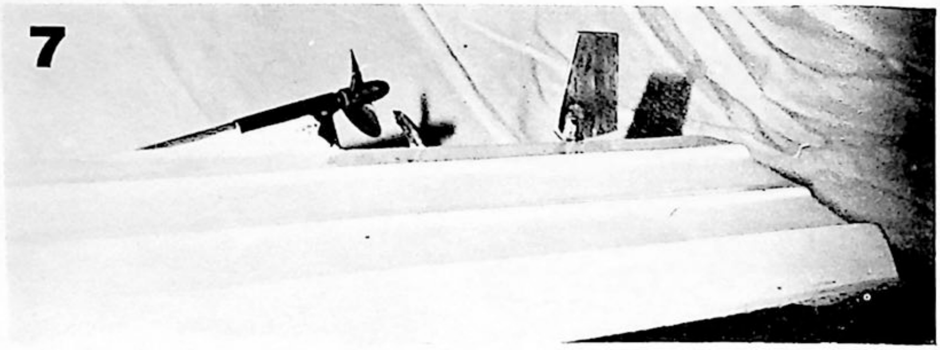
down and around the shaft tube and around the skeg. When the Eazibuild has set, take the engine and shaft out of the hull, and again using Eazibuild, make up and strengthen around the four mounting feet. This has now taken care of the most difficult part of building your multi boat.

Rudder
The rudder I use is the one supplied by **Racing Models** and comprises a stainless steel rudder and brass tube, with bearings in either end. I then solder a piece of 1/16in brass plate, approximately 1in x 2in, to the tube, using silver solder. (Don't forget to take out the plastic bearings when silver soldering), see fig. 6. Next, drill the hole in the hull for the rudder tube to fit through. Now place a piece of 2 BA shaft, about 10in long, through the bearings, as if it were the rudder. With the extra length it helps get the tube vertical as it is easier for eyeing up. On the *Alpha* it has to be slightly angled, but the measurement is given on the setting up instructions. To fix it in position I again use Eazibuild, but make sure that the plate and hull bottom are free from dirt and grease. Roughen up both the surfaces with a file and/or a wire brush as I did when fixing the engine mounts into position. Smother the bottom of the plate with Eazibuild and place into position in the hull. Now make sure that the rudder tube is quite vertical in the aft and fore planes. It should, when viewed from the rear of the boat, be right in the centre of the propeller tube bearing. Then looking from the side of the boat, make sure that the angle is correct. If at this stage you have still not made a stand for your boat, it would be of great assistance to do so. If you have any money left in the kitty, **SHG Marine** and **Model Racing Hulls** manufacture grp boat stands which are quite good and strong, but one made from wood is the usual type used. Now smooth out the Eazibuild and check that all is okay and leave well alone until it has had time to set.

On the *Alpha* a special rudder shape is recommended, so I made one out of a piece of stainless steel sheet, exactly to size and shape, although by using the **Racing Models** large rudder a near enough rudder shape could be made.

Water Scoop
Various types of commercial water scoops are available, but I use two lengths of ⅛in inside dia. copper tubing. The reason for two lengths is, quite simply, I always have two water scoop inlets. Even before the commercially available manifold water jackets and water cooled pipes were brought onto the market I used to water cool the manifold by winding ⅛in dia. copper tube around it. I also found out by experimenting that two water inlets were far more satisfactory than just one.

Cut a slot in the hull bottom where the water scoop pick up will be. The ideal place is as near to the prop as possible, but make sure the propeller can be screwed on and off without fouling the water scoop inlets. Then take the two lengths of copper tubing and silver solder the first ¾in together. The length of copper tube can be as little as 6in long or reach as far as the nipples on the engine. It is then a simple matter of bending, shaping and then fixing into position using Eazibuild, see figure 7.


7

In the next *Sprayrails* in August I will continue building the *Alpha 20* and then at a later date I will help you prepare your boat for its first race.

New Products Review
Two new products recently introduced to the model trade by John Stidwill's **Racing Models** are a revolutionary new lubricant called **Triflon** and an X45 and X50 alloy prop.

Triflon is a base fluid in which there are suspended millions of micron size particles of PTFE, which provides a means of lubricating to a degree hitherto impossible. It can be used in engines, drive shafts, bearings, etc. and the distributors to the model trade, **Racing Models**, found a gain in revs of around 10% in a 10cc engine treated with **Triflon**. Although I have not done any measured tests with this lubricant I tried it on an OS 60 bearing, and there was a marked improvement over two other types of oil used. Most model shops now stock **Triflon**, and it retails at about 60p.

Metal props, although usually quite efficient, are also very expensive. Not so with the new type from **Racing Models**. They retail at less than half the price of most other metal props on the market, and in fact are only slightly dearer than most plastic props.

They are made of a malleable alloy, which permits one to alter the pitch and blade area quite easily. The alloy is such that it can be bent and shaped quite easily without the fear that it will crack. Only available in two sizes, X45 and X50, but because of the tweaking that can be achieved, most 6½cc and 10cc motors should find one or the other suitable after a little experimenting. The retail price of 85p will no doubt encourage us all to at least give them a try.

Racing Models' Rubber Mounts Kit
The development of rubber mounts has been going on for about two years. Notably the Belgain modellers started to experiment with rubber mounted engines in their boats, and achieved remarkably low noise levels. So noise could be overcome by the use of rubber mounted engines, but of course this meant different types of shaft and/or couplings had to be used, so the whole concept of boat building, as far as competition boaters were concerned, was to change.

Racing Models, after experimenting with various types and grades of rubber, brought out a comprehensive rubber mounts kit. The kit comprised all parts required to mount any engine in a boat on rubbers.

Since that early development, **Racing Models**, with the help of the rubber manufacturers, have been doing a lot of research on the whole concept of rubber mounts. One main point to arise from these tests is that, contrary to our original thinking, and modeller's theory, that the rubbers should be spaced well out from the engine, research has indicated that these should be quite close to the motor. The ideal position of the rubbers should be so that the rear pair are more or less in line with the middle of the flywheel and the front pair in line with the back plate of the engine. This should reduce the resonant frequency of the engine. Also by having the rubbers at an angle of about 40 degrees, helps to cut out this resonance. A further advantage will, of course, be the possibility of using softer rubbers, therefore hopefully reducing noise a little more. I am at present building a new boat with a **Rossi 65 Rear** as the power plant, and I have used these new mounts, so at a later date I will let you have full details on their behaviour.

The diagram shows the layout of the new mounts when assembled to the engine; also photo of parts in kit. The only difference between the new and old type is the angled plates, which are also made from stronger alloy. The only job the modeller has to undertake is the

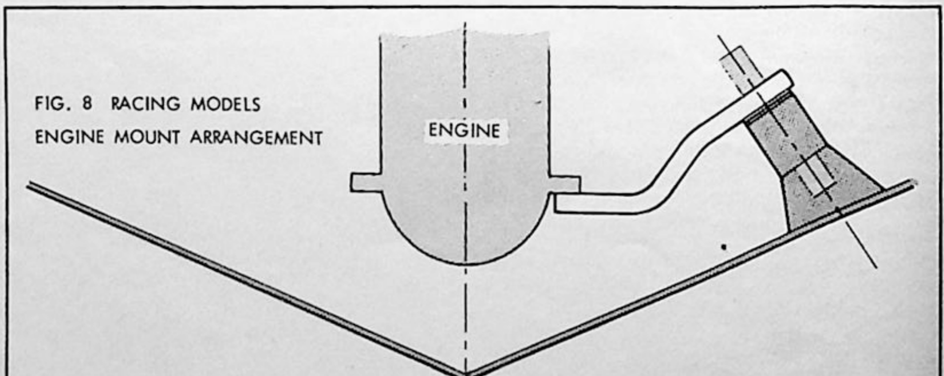
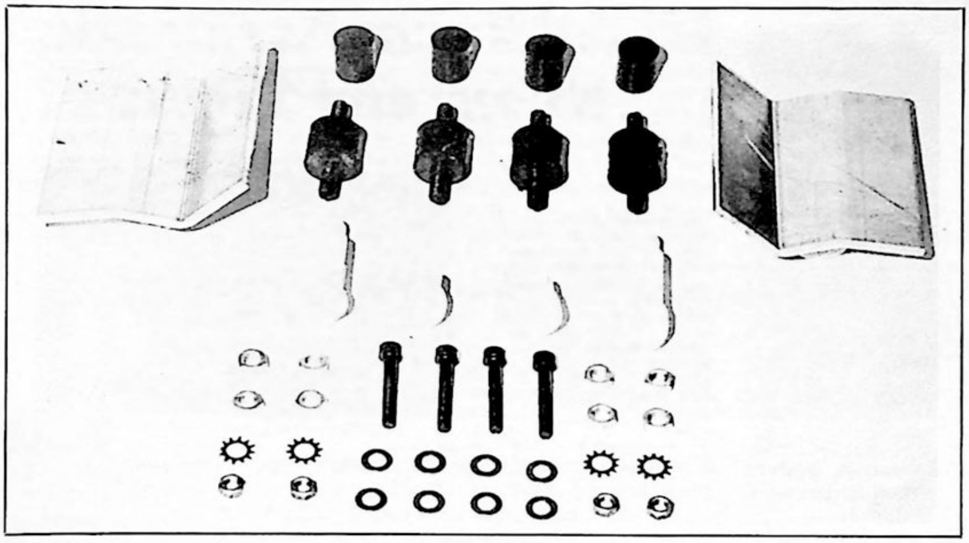


FIG. 8 RACING MODELS ENGINE MOUNT ARRANGEMENT



Racing Models new rubber mounts

drilling of the engine plate to suit his own motor, and then the assembly of all the bits to the motor. It is then a simple job of mounting into the boat. When fibreglassing the mounts in position, make sure that you use the plastic spacers provided. If the rubbers are used, they will take up incorrect positions due to their flexibility. The threads used are 4mm and 5mm. When tightening the engine onto the mounts make sure that you do not overtighten, as this will twist and distort the rubbers. Also use two nuts on the top of the rubbers. One then acts as a lock nut. One other important thing, the star washers included in the kit must go between the rubber and plate, *not* as I have seen on a lot of installations, under the nut. The cost of the new rubber mounts kit will be £5.90.

Junior Multi Racing

It's nice to see more and more juniors competing in multi racing these days, but I think more encouragement could be given to these lads and, of course, girls, by their own clubs and by organised races being run for juniors only. Perhaps if one race in a day's multi event were for juniors only it might encourage other juniors to come forward and enjoy our sport, or is it obsession? At the Telford Club there are several very competent young lads ranging in age from seven to fifteen, who race in our club events, some of whom now enter and travel to regattas all over the country. At the moment the only all junior events held are the Multi Eliminators and National Finals. I think most of you who were at the finals in Ipswich last year would agree that the juniors put up a really good show of themselves. In fact, the Junior 3½cc race was probably the most exciting of the weekend. It even had Frank Bradbury shouting and waving his arms about.

So, how about it competition secs? Let's have some junior events. They don't need trophies, just a bit of fun racing. One race of say 15 to 30 minutes duration wouldn't take up much time. It could even be fitted into the dinner hour.

By the way kids, under an MPBA ruling you are allowed to use your dad's boat. Sorry fellas, I had to tell them!

I spoke with Jason Wilkie recently, who competes as a Junior, and I noted the following.

Jason started to run his first boat when he was seven. His first model was a **Mini Jaguar** with a **Veco 19** entering at first Telford club events. His first open event came a year later when just eight years old. Now Jason is ten, and with guidance from dad is building his first multi boat. In three years of club competition he has been placed 16 times, 6-1st, 7-2nd, 3-3rd, and last year in Midland competitions was placed 1st in Junior FSR 3½ and 2nd in FSR 15. Later on at the Nationals he was placed 3rd in FSR 3½. Jason is seen in the picture at an early 1979 competition with his own 3½cc multi boat.

Does Your Boat Float?

A strange question you might ask, but when you have witnessed, as I have, fellow competitors' concern having seen their boats disappear from sight in the middle of the lake, you might well ask "Does *your* boat float?" Now it doesn't matter whether you are a serious competitor or just a keen weekend boater. More care is required surely if you have some regard for the investment made (hull and fittings £30-£35; engine £50-£100; radio control in the hull £60-£75; the water-borne part of your model £140-£210, and probably commitment in total of £350-£400). So why not take more care? I suppose the real problem lies in the advice you receive from either your fellow club members or so called experts. Well, we're not claiming to be self appointed experts, but Tony has put pen to paper and now discusses three alternative methods of adding buoyancy to your model. Over to Tony.

There are at least three ways of giving your model buoyancy, polystyrene pieces or granules, air bags, and two-part foam. Whatever method you decide upon, please ensure that bulkheads are used in your building plan. Let's for a moment discuss these individual methods.

Polystyrene. Normally this is put into the model in large pieces but because of its nature it cannot be made to fit all the contours of the hull and the cavities fill with water in the event of the model flipping over. Also, should your model be involved in a collision while on the water the lack of rigidity may result in the hull splitting open. The styrene pieces or granules will float out and the model will sink! Strong bulkheads will reduce the risk and while this is an easy method of giving buoyancy I don't however give it my recommendation.

Air bags. Again this is an extremely quick, clean and inexpensive method to give your model buoyancy. You should, however, use them in conjunction with bulkheads, both at the bow and along the sides. When preparing the bulkhead please ensure that you allow the special shaped bags the opportunity to fully expand. When inflated the bulkhead should also have suitable slots/holes through which you can put the bags before you inflate. Remember, you may need also to remove them should they get punctured. Before using your model always ensure that they are fully inflated. In the event of a collision the hull could split open unless the bulkheads are well glassed in. On impact the bags could puncture or come out of the hull. So great care must be taken when you start their installation. Routine checks thereafter to ensure they are inflated is a must. This method will give satisfactory performance and add very little weight to hull and hardware set-up. They are also if you like, cost effective, in that you can remove them and fit to another hull if so desired. Spare air bags are no weight in your equipment box.

Two-part foam. This is the favoured method for the competition man. It is in my view both the most effective and potentially the messiest. You can buy the two components either from **Strand Glass Centres**, or alternatively **Irvine Engines** market a kit available from most model shops. *Follow the instructions to the letter and you should not have too much trouble.* Before adding the foam which, incidentally, does add some extra weight, you should fit all your bulkheads, glassing them in. You should have both one large hole into which you pour the foam mixture, and some small expansion holes. After you have foamed your model, cut away any excess foam and glass the whole interior of the hull with finishing tissue and gel over. This will ensure that no oil or water can get into the foam and so add unnecessary weight. The extra time is well spent. The model is more rigid than with any other method and will, because of the honeycomb centre of the foam, be able to sustain the most severe knock imaginable. Provided all the surfaces were clean before starting to add the foam to your hull, it is unlikely that the model will ever burst open, and foam cannot come out of the model as it sets to the inner surfaces of the hull and bulkhead making a complete bond. For competition purposes this method is second to none. *Whatever method you decide upon always check that the model will float if submerged.*

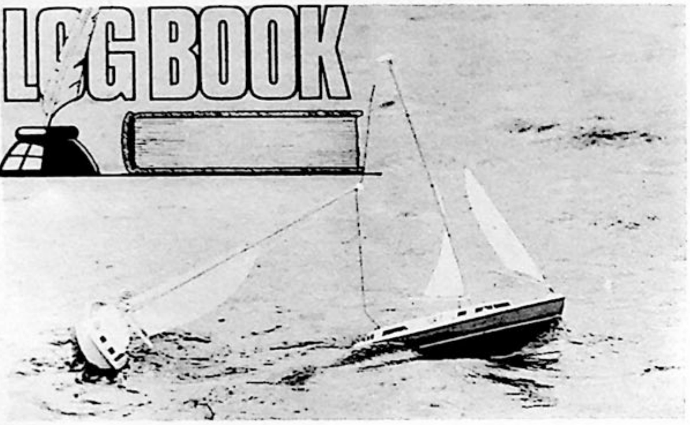
Props

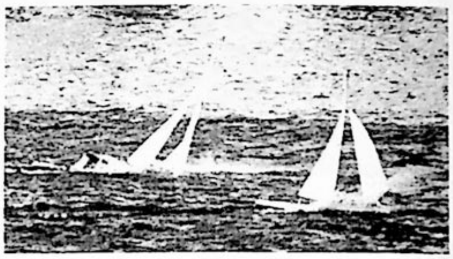
As a follow-up to our April *Sprayrails* **Radio Active Manufacturing** have advised that since 1976(!) they have welded in a threaded bush to their range of props. Obviously the type we reviewed is still available from model shops. However, if great care is taken when screwing onto the shaft the older type will give satisfactory performance. As soon as the improved props work their way through the distribution system you will, no doubt, note the improvement for yourself. Indeed you may have already done so. In a later *Sprayrails* we will give a further report. We will also make enquiries with other competition men for their views and publish our findings.

In closing the June *Sprayrails* I would like to thank both those who have put pen to paper, dropped me a few lines, or telephoned me at home. Your response is very encouraging, and I and my fellow contributors will continue to make our *Sprayrails* column as interesting as possible. In the next *Sprayrails* we will feature Part II of the *Alpha* project, publish readers' letters, give coverage to **Racing Models'** 3½cc gearbox and engine layouts. We will also have a few competition reports for you.

LOG BOOK

Model Yacht Association News and Views





This season's early meetings have certainly found plenty of breeze. Left, *the Duplex 575's first National event had to be called off in near gale conditions; even the 'pocket handkerchief' suits were too much. Woodley Open, see 'Round the Regattas', provided 26 mph squalls, one of which caused these U boat antics. Photo by Brian Sheldrake.*

REGRETTABLY, once again the Naviga European Sailing Championships and the IMYRU World R/C Yacht Championships clash in 1980; details of the Naviga meeting recently received show that it is being held in Hungary from July 25 to Aug. 1. Member countries can send four entrants for the free-sailing events and three for each of the R/C classes, plus junior (under 16) entries. The site is the Csonakazo-See, a lake 6km from the centre of Nagykanizsa, which is in the south west of Hungary, close to the border with Yugoslavia and only a short distance from the S.E. corner of Austria; Vienna is 260km away. The lake is from 1½ to 4m depth, about 18-20°C temperature, and the prevailing wind is NNW 1-4m/sec (say 2-8mph). August temperatures are around 22-25°C (71-77°F).

Accommodation for competitors is offered in three-bed college rooms in the town centre, from lunch on July 25 to breakfast Aug 2 (8 nights), three meals a day without drinks, for $120, near enough £60, which includes the final evening's banquet. Some team supporters may be able to be accommodated if applications are in by April 1 1980. 0ther visitors can obtain accommodation details from the local tourist office, Nagykanizsai Idegenforgalmi Iroda, H-8800, Nagykanizsa, Lenin ut 13.

Reception and registration starts at 2pm on July 25 and continues on the 26th, with facilities for practice. An opening ceremony on the 27th is followed by the start of the racing at 2pm, which then continues daily 9am-7pm (with 1½hr lunch break) till the 31st and finishes at noon on Aug 1. Permitted frequencies are 27 and 40.68mHz. All necessary documentation can be collected at the Naviga Championships at Duisburg this August, but queries can be dealt with by the host organisation, Magyar Modellezo Szovetseg, 1374 Budapest, Rosenberg Lazaspur utca 1.

French RM International

Following a highly successful RM International at Creteil last October, the Arc en Ciel MYC are organising another for Sept. 22/23 1979, also at the Creteil lake, and hope that some British skippers will find their way there. The lake is about 10km out of Paris, in the S.E. suburbs, and a very friendly and warm welcome can be anticipated by all skippers and supporters. IMYRU rules, unlimited entries, but closing date the end of June. Details and entry forms from Mons. Lhuiziere, 5 rue du General Leclerc, 94000 Creteil, France.

Frank Walker

We regret to announce the death on March 18 of Frank Walker, aged 76, after a brief illness. Frank, appointed a Vice President of the MYA at last December's general meeting, had been active in R/C yachting almost since its inception, initially in the Poole club but subsequently on a wider scale; a good many boats owe their fittings and accessories to his skills, and his readiness to help fellow model yachtsmen was an example to us all. In the early days of multiple yacht racing some difficulty was experienced in establishing satisfactory schedules, and Frank, a perfectionist, quietly devoted many hours to improving them, to the point where he became the accepted reference on the subject. His "magnum opus" was undoubtedly the heat system he worked out for the first major international meeting in 1975, where the previously unheard of total of 56 RM and 37 R10R yachts were comfortably accommodated; his system was repeated for the 42-boat 1978 British RM Championships and the 1978 International Championships in South Africa. His loss will be felt not only in the Poole and Gosport clubs, but by all model yachtsmen, on whose behalf we extend sympathy to his widow and family.

Changes

The registrar for the M and RM classes is now John Foster, 22 Westwood Road, Bermerton Heath, Salisbury, Wilts.

Secretary of Basildon MYC is now G. J. Bantock, 30 Winstree Road, Burnham-on-Crouch, Essex (914-783-890), and of Birmingham MYC W. Akers, 38 Cotysmore Road, Sutton Coldfield, West Midlands B75 6BL.

R/C Sailing Rules

We are asked to point out that David Skelton's letter about racing rules (April issue) was directed at the comments made by Roy Stevens (January issue) and not at Woodspring Model Sailing Club.

Fixture List

The compilation of a fixture list is something of an onerous task, since many clubs do not arrange their programmes sufficiently early. Possibly this is due to a tendency to wait to see where a clear week-end falls, or hanging on to discuss the matter at a District meeting. Now, the dates and venues for Nationals are pretty well tied up at the May Council meeting of the preceding year, and most Districts have a major meeting before the MYA AGM. Is it not possible for more clubs (*all* clubs) to have their programmes decided by the date of the AGM? Other associations manage it.

The only reason that this is brought up is that the MYA Sec. sent out fixture lists by the end of March, which was on schedule and as early as they've ever been, but this doesn't mean that every club member saw them. A surprising number rely on the list published in MB, and by the time it can appear, almost a third of the regattas are history and there is no point in publishing them. An alternative is for the keen club to notify direct either the Editor, or your Correspondent, of any open races in March, April and May, as soon as they are decided on. This might increase entries, and at the very least it's a form of advertising that the club is active.

Pickett's Lock

Following the immortal Taylor saga of a year or two back, the London Dinghy Exhibition tends to be called "Pickett's Lock" instead of its proper title! Be that as it may, the MYA was there with a fine display of vane and radio boats and back-up material with (mirabile ditu) a reasonable manning level for most of the two-day show. An innovation was a guess-the-finished-weight competition involving the indefatigable Roger Stollery, who has laid on the whole thing, beginning construction of a *Pick-axe* kit at 10am on the Saturday, with the intention of sailing it on the swimming pool on Sunday afternoon before presentation of the boat (less radio) to the winning estimator. Roger in fact achieved his target and the boat was duly sailed at about 5pm on the Sunday; the whole thing attracted enormous interest and there should be a new member for the Portsmouth club, as the winner lives quite close to the Canoe Lake at Southsea. In fact there were four spot-on-estimates (from memory, it was 13lb 2½oz) and the only fair possibility was to draw from these four. As a PR exercise it was a stroke of genius and Roger is to be thanked for not only building the boat but presenting the kit in the first place.

Crowds watched demonstrations of radio sailing on the small swimming pool and radio yachts were also used to demonstrate tactics. With this exhibition, the National Boat Show, and two or three full-size yachting magazines running articles on radio models, the standing of model yachting has never been higher.

Model Yacht Association Fixtures – 1979

Date	*Event*	*Club*	*Class*
May			
26th & 27th	Tamplin Cup & Curry Mug	Gosport	'RA' & R10-R
26th to 28th	MYA National Championship	Leeds & Bradford	'RM'
28th	Nyria Cup	Gosport	'A'
June			
3rd	Metropolitan & Southern District Championship	Clapham	36R
3rd	Mayoral Cup	Fleetwood	'M'
3rd	Bolton Cup	Bolton	'RM'
9th & 10th	MYA National Championship	Birmingham	6M
10th	Metropolitan & Southern District Championship	Hove & Brighton	'A'
10th	Broads Open Event	Broads	'RM'
10th	Victor Cup	Leeds & Bradford	36R
17th	Metropolitan & Southern District Championship	Woodley	'RM'
17th	Eastern District Championship	Basildon	'RM'
17th	Northern District Team Championship	Leeds & Bradford	'RM'
17th	Andrew Memorial Cup	Birkenhead	'M'
23rd & 24th	MYA National Team Championship	Birmingham	'M'
24th	Peter Bryon Memorial Cup	Fleetwood	'RM'
24th	Hinds Cup	S.E. Essex	'RM'
24th	Dennis Secker Shield	Dovercourt	10-R
30th	Under-16 Junior Event	Birmingham	36R
July			
1st	Little Portugal Cup	Gosport	'A'
1st	Northern District Championship	Birkenhead	'RA'
1st	Jones Cup	Fleetwood	'A'
7th & 8th	MYA National Championship	Basildon	'RA'
8th	Belton Cup	Dovercourt	'M'
8th	Midland District Championship	Bournville	'M'
8th	Sandylands Cup	Birkenhead	'M'
8th	Fred Parks Cup	Cleethorpes	'M'
15th	Rhuddlan Borough Cup	Rhyl	'RM'
15th	Rawdon Cup	Leeds & Bradford	'A'
22nd to 27th	MYA/Naviga Event	Fleetwood	'RM' & R10-R
29th to August 3rd	MYA National Championship and Yachting Monthly Cup	Fleetwood	'A'
August			
5th	Leeds & Bradford Open Event	Leeds & Bradford	'RA'
5th	Flora Cup	North Liverpool	'M'
11th	Lawrence Bowl	Birmingham	36R
11th	LRC MS Event	YM 6m OA	'RA'
12th	Eastern District Championship	Dovercourt	'M'
12th	Northern District Championship	Birkenhead	'M'
12th	Midland District Championship	Birmingham	36R
12th	Yorkshire Cash Registers Cup	Leeds & Bradford	R10-R
19th	Eastern District Championship	Broads	R10-R
19th	Northern District Championship	Cleveland	R10-R
19th	Northern District Championship	Leeds & Bradford	'A'
25th & 26th	MYA National Championship	Bournville	36R

Remainder of fixtures next issue.

PRESTWICH MODEL CENTRE

Buy it with Access
BARCLAYCARD VISA

8 WARWICK STREET, PRESTWICH
Nr. MANCHESTER. Tel: 061-798 0655
Open Monday-Saturday 9.30-6.00
Closed all day Wed. Late night Fri 8.30

RADIO

Futaba Medallion 2 dry+2 x 28m servos	£49.50
Futaba 6+2 x 17m servos	£168.00
Futaba 6+2 x 28m servos	£150.00
Futaba 2 nicads 2 x 28m servos	£107.00
Futaba 3 nicads 2 x 17m servos	£148.50
Futaba switch harness	£2.50
Futaba transmitter aerial	£4.00
Futaba Servo head screws	10p
Futaba servo 'T' arms	18p
Sanwa custom 6 4 ball race servos	£269.00
Futaba Medallion 4 dry 4 servos	£99.50

HULLS

ALPHA 20, ALPHA 40

We have taken over the distribution rights on these excellent hulls and can offer same day despatch. Price **£16.00+£1.00** pp.

Jumbo Jaguar 10cc	£25.00
Tiger 10cc	£23.00
Puma 10cc	£22.50
Hunter 10cc	£28.50
Capri 3.5-6.5cc	£22.50
Mk II Jaguar 6.5cc	£19.00
Mini Jaguar 3.5cc	£18.00
Scorpion	£13.50
Glolec 30	£13.50
Glolec 27	£12.80

ENGINES

AW 40 marine (pp £1.00)	£66.00
Rossi 65 inc. pipe (pp £1.50)	£130.00
OPS 65 Marine inc. pipe (pp £1.50)	£119.50
OPS 40 Marine inc. pipe	£59.00
OPS 21 Marine inc. pipe	£57.95
KB21 Marine	£48.95
Irvine 40 Marine	£49.95
Meteor 40 Marine	£42.85
OPS 60 Ursus Marine	£75.95
Meteor 60 Marine	£40.54
Gear Mount KB21 or OPS 21	£19.75

ACCESSORIES

Heavy duty flexi complete	£9.25
Normal flexi complete	£8.95
Electric flexi complete	£7.95
Spare engine coupling for flexi's	£1.10
Spare flexi with shaft H.D.	£3.25
Spare flexi with shaft, med.	£2.90
Spare flexi wire only, med.	£1.15
Teflon inner medium flexi	55p
Tube bearings heavy duty type (2)	65p
Tube bearings medium type (2)	60p
Tube with bearings, medium	£2.25
Sealed radio box with links	£3.78
Waterproof links	55p
Radio hatch cover	£1.95
Quick release hatch clips (4)	£1.10
Tiller arm double sided	65p
3/16 thrust washers	50p
Rubber mount kit complete 3.5, 6.5 or 10cc	£4.95
Spare rubbers (4)	£2.60
Plastic bases for rubbers (4)	80p
Solid engine mount	£2.40
Skeg	£1.25
Stainless rudder:	
Small	£1.45
Large	£1.55
Aerial racing models	80p
Aerial spring loaded	£1.21
2 pint tin fuel tank	£2.75
3 pint tin fuel tank	£2.95
4 pint tin fuel tank	£3.40
Tank fitting kit	£1.10
Ezebuild+(50p postage)	£1.49
Leather starting cord (ft)	50p
Trim tabs brass per pair	£1.53
Buoyancy foam (75p postage)	£2.95
Starter belts	£1.00
Silicone tube 1 metre water	60p
Silicone tube 1 metre fuel	30p
Silicone tube ½" bore exhaust ft	£1.00
Silicone tube ⅜in bore exhaust ft.	80p
Silicone tube ⅝ bore exhaust ft.	£1.20
Silicone tube ¾" bore exhaust ft.	£1.50
ED carbs all sizes	£10.85
Kavan carbs all sizes	£17.95
Sullivan starter for boats	£29.90
Model Technics 80-20 straight fuel	£3.00
Ezeglaze	£2.25
Triflon	60p

TUNED PIPES

RACING MODELS

3.5cc stainless	£11.95
6.5cc stainless	£13.95
10cc stainless	£14.95
PMC	
3.5cc stainless water cooled	£16.00
6.5cc stainless water cooled	£18.00
10cc stainless water cooled	£20.00
35cc petrol tuned pipe water cooled	£32.00
Special 'super pipe' stainless water cooled tuned pipe for Rossi 61, 65 rear ind. OPS 61, 65 rear ind.	£26.50

MAIL ORDER SAME DAY SERVICE. CHARGES MIN. 25p.
HULLS £1.00 UK. HULLS TO EUROPE £4.50

H.M.S. WARSPITE

David Metcalf draws this famous battleship at 1/16in to 1ft

OF ALL the battleships to have served with the Royal Navy in the last hundred years, *HMS Warspite* can justly claim to have seen more fighting action than any other.

She was the last of five units of the *Queen Elizabeth* class; these ships were the first in the world to have their main armament in a superimposed arrangement, later to become common to all large surface units. When they were launched they were the largest battleships in the world, and mounted the first twin 15in guns on a warship. These mounts were so successful that when after the second world war the new battleship *Vanguard* was being designed, the same guns and mountings were used for her.

The original secondary armament was twelve 6in guns (all in casements). These were only of real use in broadside fire owing to their limited arcs of fire on one beam only and during the many refits these were replaced by various anti-aircraft weapons.

The class served the Navy for over 30 years and were never really bettered, and even at the end of their service they were still front line fighting units.

If we follow quickly the service career of *Warspite* we will see just how good these ships were.

She was commissioned on the 12th March 1915 into the 5th Battle Squadron, and 31st May 1916 found her in company with three others of her class at Jutland, attached to Beatty's Battle-cruiser Squadron. At the crucial moment of the start of the battle, while under fire from the German High Seas Fleet and executing a 180 degree turn, her steering failed and she circled out of control in the path of the whole fleet. She was surrounded by so many hits and near misses that at one stage she was not visible and when she regained control and emerged, she had sustained no less than 19 heavy calibre hits. Although seriously damaged the citadel had not been breached and she was still firing all her guns. She returned to Devonport for repairs, spending the rest of the war at Scapa.

After the war she served with the Atlantic and Mediterranean Fleets until 1924 when she underwent a refit and modernisation, the main alteration being the trunking of the two funnels into one. She underwent a further complete refit costing over £3,000,000. This involved stripping her down to deck level and completely rebuilding the superstructure. During this refit she received a very heavy A.A. armament, aircraft hangar and two floatplanes.

She saw service in all the major theatres of WWII, taking part in the second Battle of Narvik, the Norwegian campaign, Malta convoys, the Battle of Cape Matapan, the Sicilian and Salerno campaigns, D-day bombardments at Normandy, which added no fewer than fourteen separate battle honours to her name.

During this time she spent almost 18 months in dock being repaired after being hit by bombs and glider bombs. She was put up for disposal in March '46, was sold in 1947, but while being towed from Portsmouth to the Clyde for breaking up, she was driven ashore in Mount's Bay on the Cornish coast. It was not until 1956 that the work of dismantling was completed.

The plan shows her as in May 1942, I have omitted the torpedo bulges from the plans for clarity. She would have been a light to medium grey, decks were light wood, gun barrels and top mast black.

	Legend
Laid Down:	23rd October 1912
Launched:	29th November 1913
Commissioned:	12th March 1915
Built:	H.M. Dockyard, Devonport
Dimensions:	640ft x 104ft x 33ft
Displacement:	35,850 tons
Armament:	8 x 15in BL Mk I 8 x 6in Mk XII 8 x 4in HA/LA Mk XVI 32 x 2 pdr. Pom-Poms. A.A. Numerous 20mm Oerlikons
Machinery:	Parsons Turbines, 80,000 SHP – 25 knots
Oil Fuel:	3,600 tons max.
Complement:	1,250/1,300 officers and men

Linda Arbon of Telford Club takes a poetic look at

Model Boating

In nineteen seventy one,
The day it all begun,
I little knew what was in store,
The day he walked out of the door.

"I'm going into town", he said,
"I won't forget to bring the bread".
He forgotl and brought instead
A model boat he painted red.

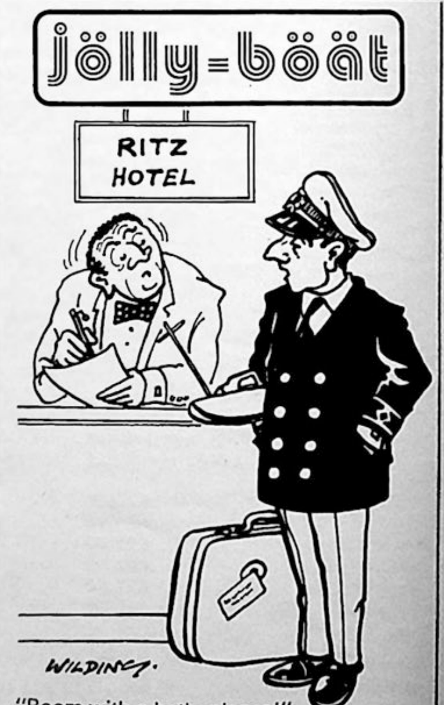
That was the start and very soon,
His workshop was the spare bedroom.
He went from little tiny ships
To monsters, bulging at the tips.

From small beginnings, large things grow,
As I am sure most boaters know.
At 10cc he goes no higher,
He just tries to find that bit more power.

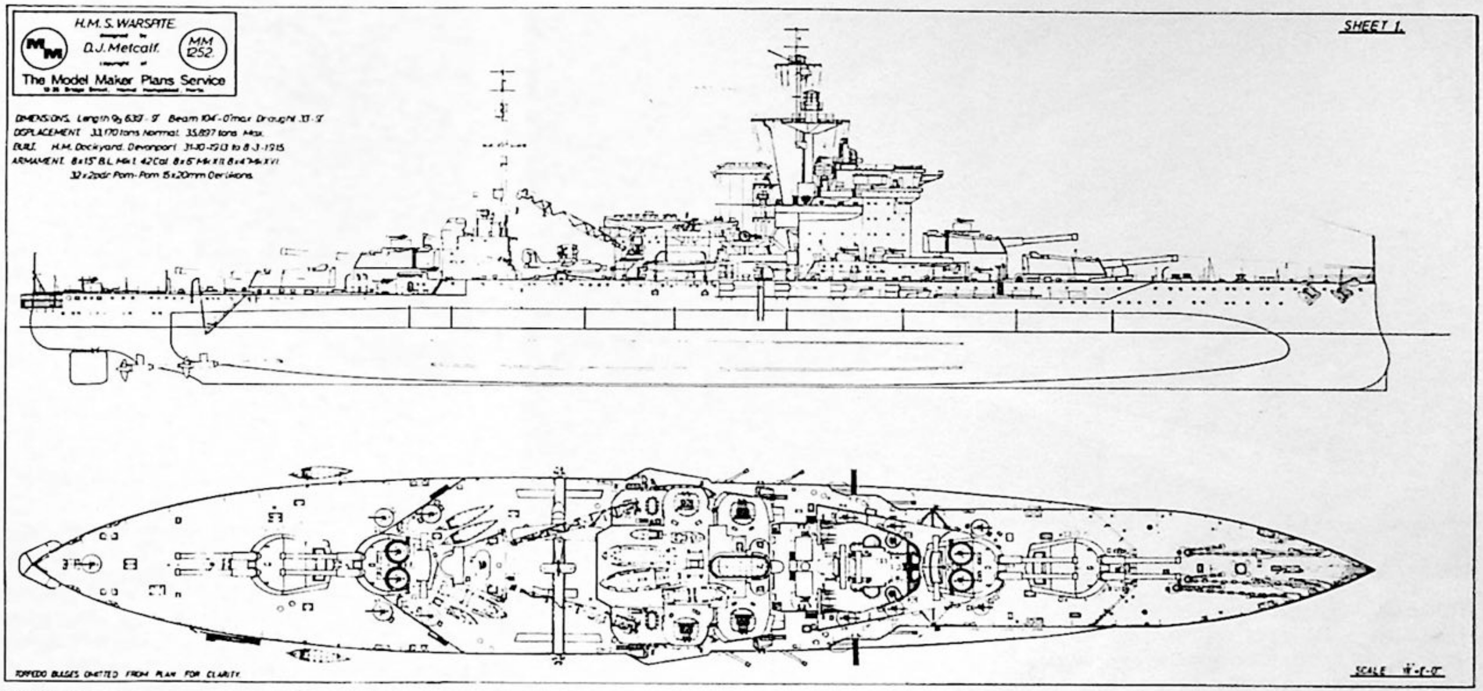
A Multi Champion he has been,
And now the World is what he dreams.
If family love can get him through
He'll knock 'em flat and we will too.

Up at dawn, we'd meet the crew,
Like Topsy, we just grew and grew.
Six cars or more, we'd wend our way
To North or South just for the day.

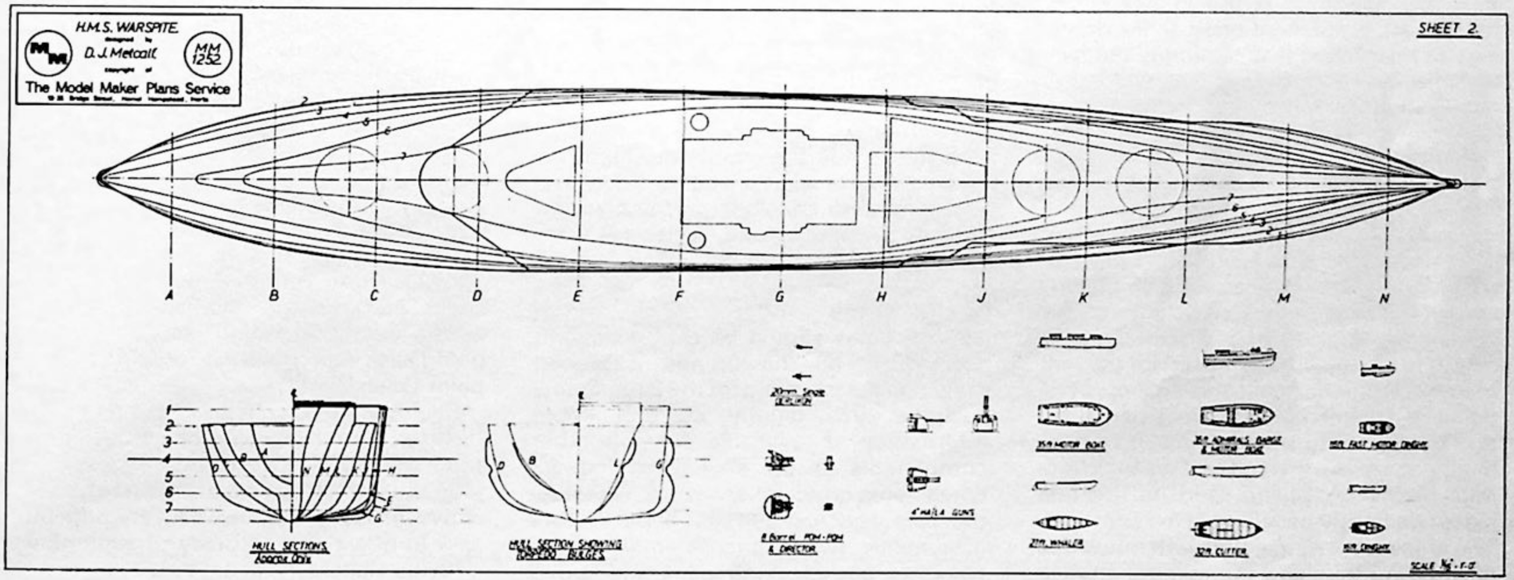
In rain or shine, even hail and snow,
We stand and watch our club's boats go.
We make a fuss whenever they win
And if they lose, well, we just grin.



"Room with a bath, please!"

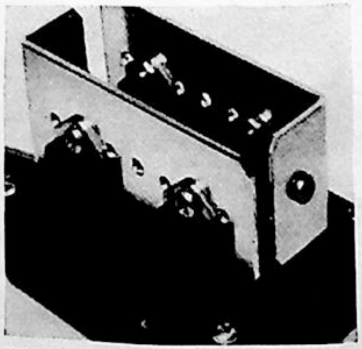

H.M.S. WARSPITE
designed by
D.J.Metcalf.
copyright of
The Model Maker Plans Service
MM 1252.
SHEET 1.
DIMENSIONS. Length 0g 639'-9" Beam 104'-0"max Draught 33'-9"
DISPLACEMENT 33,170 tons Normal. 35,897 tons Max.
BUILT H.M. Dockyard. Devonport 31-10-1913 to 8-3-1915
ARMAMENT 8x15" B.L. Mk I 42Cal 8x6" Mk XII 8x4" Mk XVI
32x2pdr Pom-Pom 15x20mm Oerlikons
TORPEDO BULGES OMITTED FROM PLAN FOR CLARITY
SCALE

FULL SIZE COPIES OF THIS PLAN, TOTALLING TWO SHEETS, ARE AVAILABLE PRICE £2.75 (CODE H) + 30 PENCE POST AND PACKING, FROM M.B. PLANS SERVICE, P.O. BOX 35, BRIDGE STREET, HEMEL HEMPSTEAD, HERTS, HP1 1EE. QUOTE PLAN MM 1252 WHEN ORDERING. OVERSEAS READERS MAY OBTAIN COPIES FROM THEIR LOCAL AGENTS.


H.M.S. WARSPITE
designed by
D.J.Metcalf.
copyright of
The Model Maker Plans Service
MM 1252
SHEET 2.
A
B
C
D
E
F
G
H
J
K
L
M
N
1
2
3
4
5
6
7
HULL SECTIONS Approx Only
HULL SECTION SHOWING TORPEDO BULGES
20mm Single OERLIKON
8 Barrel POM-POM & DIRECTOR
4" HA/LA GUNS
35ft MOTOR BOAT
27ft WHALER
35ft ADMIRAL'S BARGE & MOTOR BOAT
32ft CUTTER
16ft FAST MOTOR DINGHY
16ft DINGHY
SCALE

VIKING ELECTRONIC SYSTEMS

PROPORTIONAL ELECTRONIC CONTROLLERS NOT REQUIRING SERVO-OPERATION



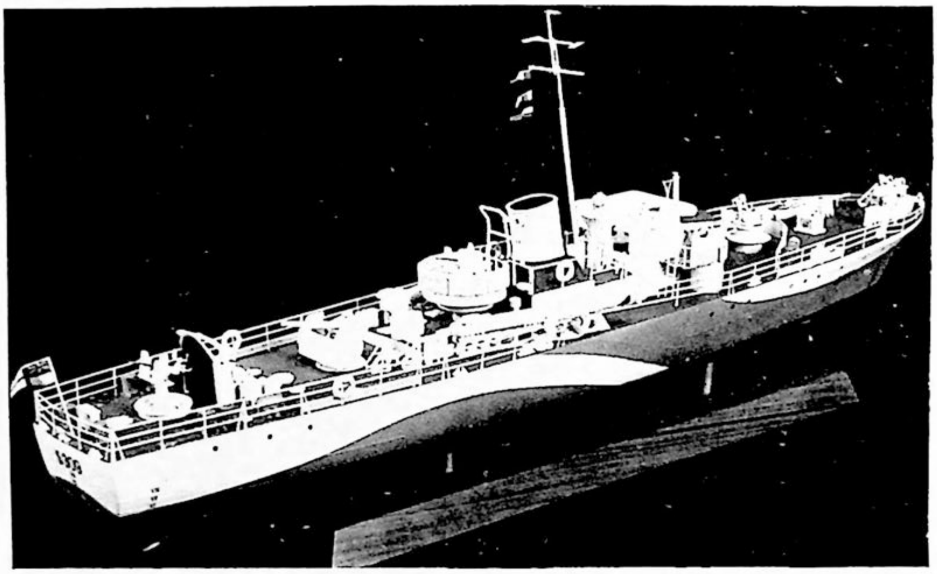
Fully automatic reversible electric motor speed controllers, which are super-efficient using latest state of the ART electronic circuitry including C-Mos logic ICs. The units operate direct from the receiver, thus saving the cost and weight of a servo. The units give fully proportional speed control from zero to full rpm with a central Deaband between forward and reverse operate from just one transmitter throttle stick. Output ratings are from 5 amps to 30 amps steady working current at up to 24 volts. 5 amp **£23.50**; 10 amp **£28.59**; 15 amp **£34.50**; 30 amp **£48.50**. Above are all reversible. Special 30 amp non-reversible **£31.50**.

PLEASE SEND SAE FOR FURTHER INFORMATION

★ NEW ITEM ★
RADIO-SWITCH
Operating direct from
spare Channel
Size 2in. x 1in. x ½in.
approx
ON/OFF: 1 Amp **£4.25**
5 Amp **£7.60**
10 Amp **£9.40**

113 LISCOMBE, BRACKNELL, BERKS, ENGLAND **Tel: Bracknell 55124**

(SPECIAL SYSTEMS MADE TO ORDER — ASK FOR QUOTATION)



Second of a three part review

HMS GREY GOOSE

We build the latest John Piper kit

Hull camouflage

Herewith our first complaint. Most sources of information on *Grey Goose* consider that the area from the foredeck breakwater aft to the ½in machine guns was covered with grey-green Semtex, and this information, plus the engine room hatches aft, is not mentioned on the drawings or instruction leaflet, simply the fact that the deck was dark grey. Obviously, many modellers will research further information before building, and the series by John Lambert will fill in many gaps, but we were working to a somewhat tight time schedule and the relevant information only became available when it was too late. However, assuming the walkways and hatches are completed, mask off and spray the remainder of the deck. Several coats are needed. The next colour to be applied is dark red for the hull below waterline. Again this was sprayed using a **Humbrol** modeller's airbrush, and **Gloy** and **Humbrol** paints. A camouflage pattern is provided and we took tracings of this. Applying them to the hull sides, we lightly pencilled in the contours. The areas were marked off with thin strips of masking tape and the colours applied with care and patience. Wait at least 24 hours before masking over a painted area to avoid lifting the surface – there is plenty of time as assembly of the fittings is going to take 50 hours plus.

At this stage the hull can be fitted to the supplied stand, which should have been polished with teak cream, and the propshaft, screws and rudders fitted with cyano to predrilled holes. A small point here – the holes ought to be drilled before initial smoothing of the hull, as the location of rudders is given by small indentations in the hull bottom which might be inadvertently filled as pin holes. Once lost, there are no dimensions on the plans to relocate these positions. We speak from experience!

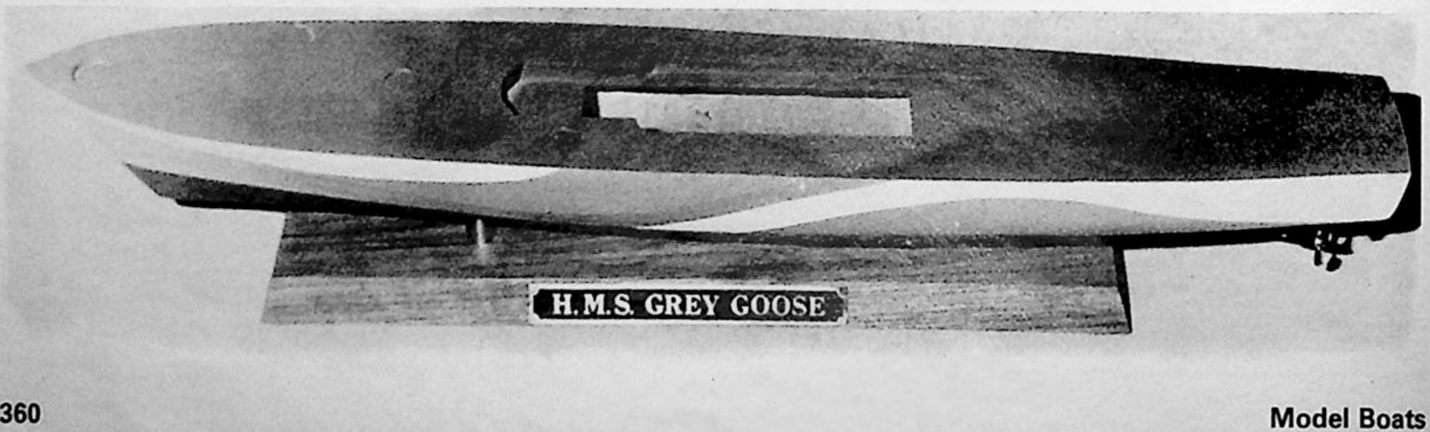
Deck fittings

No difficulties should be experienced in assembling all the fittings. Exploded drawings are provided for the larger items such as guns, dinghy, etc and ample information is available for the other components on the plans provided. All small items require cleaning up with needle files and wet-and-dry paper before assembling with cyano. A small pair of tweezers, a magnifying glass, and strong lighting are necessary tools. After all the white metal fittings are complete, they need painting in matt white and the best method is to stick them down on adhesive tape and spray. A number of light coats will be required. At the same time, the remaining etched brass components should be sprayed before their removal from the support frames. A number of items, depth charges, splinter padding, etc will need a different colour treatment, and this can be done later by hand.

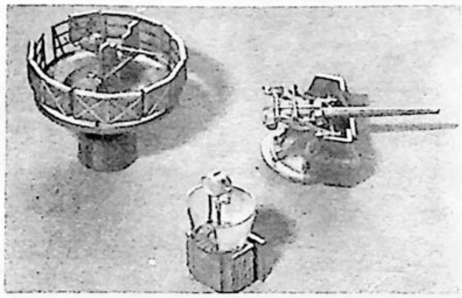
Before the long-awaited moment when one can start adding the deck-fittings to the hull, the masts should be constructed from the brass tube, rod and stainless rod supplied. We felt that solder would make a stronger joint for this item and a small jig was fabricated from a wooden block to ensure square assembly.

When fixing components to the deck, check and recheck with the drawings before final positioning, as there is no going back with cyano without ruining the paint finish.

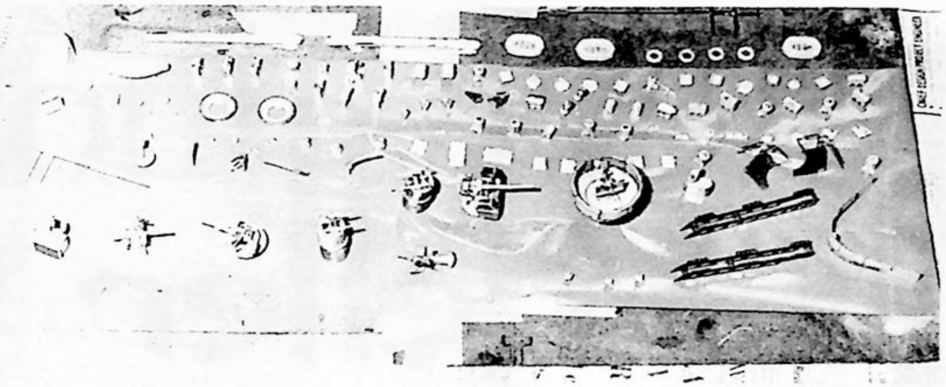
Railings are supplied as etched brass items and need very careful removal from the frames. The instructions suggest drilling the deck to accept the stanchions. However we felt this was a very difficult task to guarantee accuracy of alignment with the stanchions and would also create problems inasmuch as one is attempting to fit a rectangular foot into a round hole. Accordingly we carefully filed the stanch-



The grp hull with camouflage complete and awaiting deck fittings. Deck only was sprayed, hand brushing being used elsewhere.

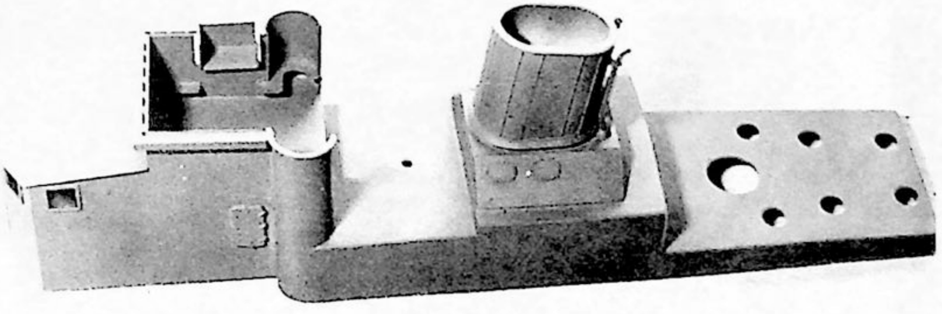


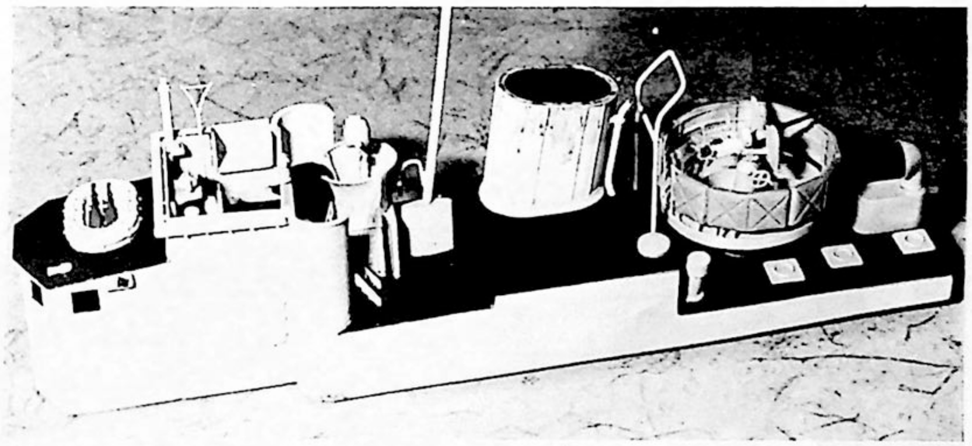
Above, just three of the many deck fittings assembled with cyanoacrylate glue and awaiting spraying with matt white paint. Components were mounted on adhesive tape sticky side up, to avoid loss and blowing away of the very light parts during spraying. Right and below, *the main superstructure assembly after priming, and complete except for handrails and rigging. The canvas sheet around the searchlight platform is made from tissue painted with watered down pva glue. As the glue dries, the tissue tautens and rigidly adheres to the framework.* Left, *shows details of bridge area on completed model. Although there are many very small fittings, with patience, a magnifying glass and strong lighting, most people should be capable of producing an excellent model.*



ion feet flush and glued the railings in position using small blobs of cyano. No difficulties were experienced.

(to be continued)





J. B. MOULDINGS

SPRINGFIELD, PENISARWAEN, CAERNARVON, GWYNEDD N. WALES

GLASSFIBRE HULLS WITH PLANS

◀ *H.M.A.F.V. SUNDERLAND*

H.M. TUG CONFIANCE ▶

Target towing and recovery boat H.M.A.F.V. Sunderland 48in. ...	£19.50
S.A. Wolraad Woltemade, 48in. tug ...	£19.50
Confiance Tug, 38in. ...	£14.50
Portia, 48in. trawler ...	£19.50
H.M.S. Bulldog, Government survey vessel, 48in. ...	£19.50
Fairmile Type D M.T.B., 48in. ...	£19.50
T.S.S. Manxman, 48in. Passenger Ferry ...	£19.50
H.M.S. Sabre 40in Fast Training Boat ...	£14.50
H.M.S. Bronnington, coastal minesweeper, 48in ...	£19.50
M.V. Miranda Guinness, 48in coastal tanker	£19.50
H.M. paddle tug, 'Favourite', 39in ...	£14.50
Marblehead, yacht, 50in ...	£14.50
Monica, yacht, 40in ...	£16.20
Azteca FPB 40in ...	£14.50
Monica II 47in ...	£19.50
H.M.S. Kingfisher 48in. ...	£19.50
Victoria & Albert 48in. ...	£19.50
Steam Gun Boat H.M.S. Grey Goose, 48in.	£19.50
Calypso 48in. ocean exploration vessel ...	£19.50
Miranda Guinness 40in. coastal tanker ...	£14.50
H.M.S. Sabre bridge moulding ...	£5.00
Gamma 48in. Firefloat ...	£19.50
Berry Castle 48in. Victorian Paddle Steamer	£19.50
Balmoral 48in. Excursion ...	£19.50
Waveney 36in. Lifeboat ...	£14.50

For further details send S.A.E. for latest illustrated lists.

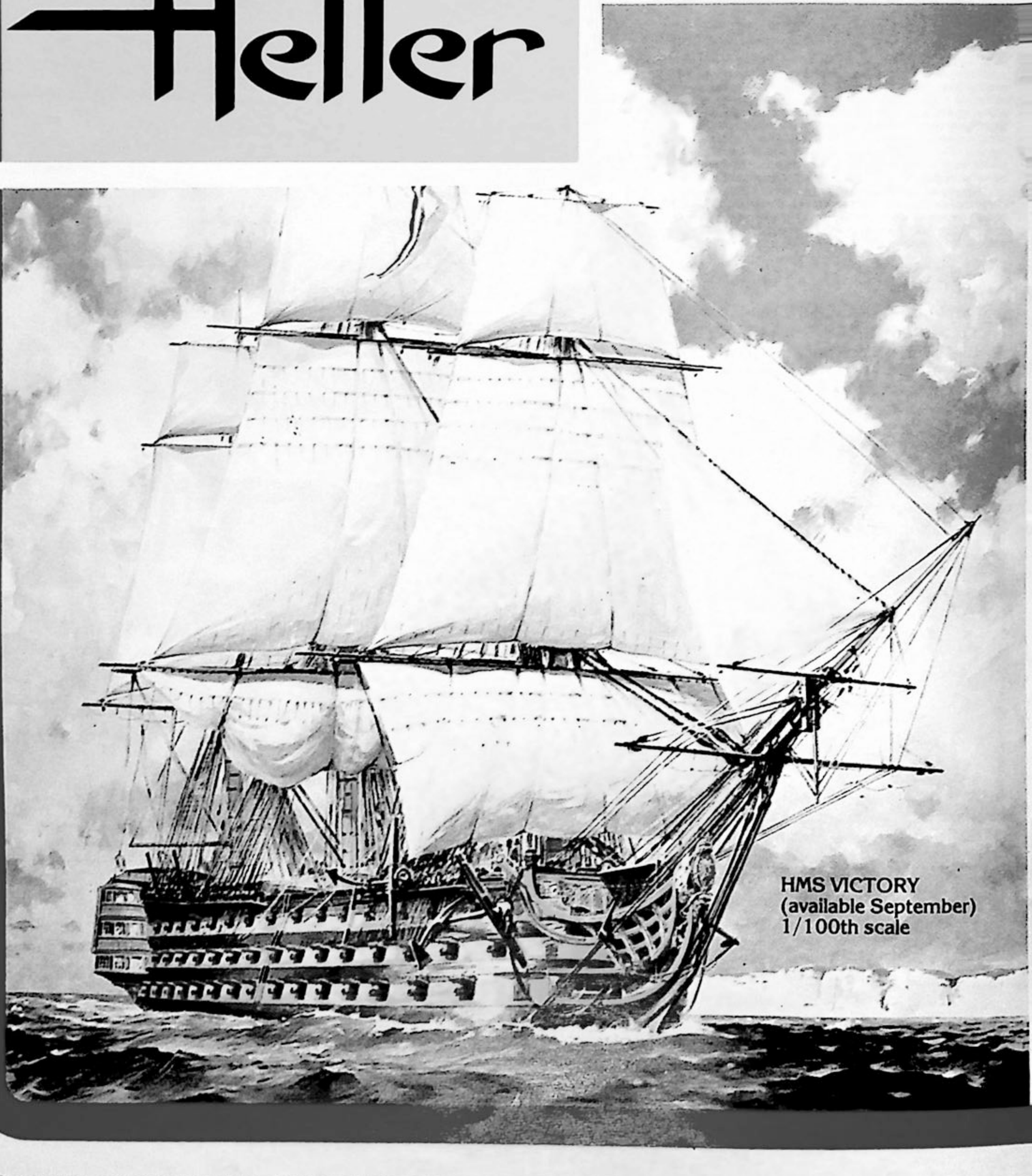
P&P on UK orders £2.50 Overseas Freight Extra

EXPORT ENQUIRIES TO MODEL EXPORTS LTD., 320 ST. JOHN STREET, LONDON EC1 4NT

TRADE ENQUIRIES INVITED

Heller

Our F



HMS VICTORY
(available September)
1/100th scale

ench Connection!

Presenting Heller, **"Our French Connection"** . . . a superior range of plastic model kits from France's leading manufacturer.

HELLER GIVE YOU CHOICE
The Heller range covers many scales and subjects. From 1/72nd scale aircraft – ideal for the young modeller – to exclusive models like the "Soleil Royale" galleon (with over 2,300 parts), or the superb 1/8th scale Citroen 15 . . . A challenge to even the most skilled modeller.

HELLER GIVE YOU QUALITY
Designers, draughtsmen and engineers spend months – sometimes years – carefully preparing plans and moulds – accurate to the last detail – to ensure that every Heller model you buy is just like the "real thing".

HELLER GIVE YOU VALUE
Skilled precision moulding, attention to detail and number of parts make Heller kits real value for money". Prices from 75p to £49·95. Available from leading model and toy shops.
For range and authenticity . . . choose Heller . . . the French name for modelling!

1/100th HISTORIC SHIPS

899	Le Soleil Royale
897*	HMS Victory

1/150th SAILING SHIPS

804	Pamir
807	Amerigo Vespucci
806	Gorch-Fock

1/200th MERCHANT MARINE

602	Jean Bart – Tug
608	Roc Amadour – Stern Trawler
604*	Marie Jeanne – Side Trawler

1/400th WARSHIPS

1038	Tirpitz
1036	Bismark
1035	Scharnhorst
1051	Hood
1052*	Illustrious
1060*	King George V
1045	Admiral Scheer
1047	Lützow
1046	Graf Spee

***NEW RELEASE**

1/150th Scale
Heller
AMERIGO VESPUCCI
1/100th Scale
1/400th Scale
HMS HOOD
Heller
Remorqueur JEAN BART
1/200th Scale

Special Offer

The latest Heller catalogue is available NOW (normal price 25p) Get your copy for **only 15p** by taking this special offer voucher to your nearest stockist.

Heller
Our French Connection...
HUMBROL
only 15p

10p off

Heller Catalogue
(normal price 25p)
This voucher entitles the holder to 10p off the latest Heller Catalogue. Only one voucher allowed for each catalogue. Limited period only.

To the Retailer: Please accept this 10p voucher in part payment for the current Heller Catalogue. Coupons for full reimbursement should be sent direct to the Administration Sales Manager, Humbrol Limited, Dept MB Marfleet, Hull.

Your English Connection

HUMBROL

HUMBROL CONSUMER PRODUCTS DIVISION OF BORDEN (U.K.) LTD.,
MARFLEET, HULL, ENGLAND

KING GEORGE V CLASS – Part One

FIGHTING FLEETS
in miniature

No. 158

by MICHAEL AINSWORTH

THE five ships of the King George V Class were the only battleships to be completed during World War 2, and the only really modern battleships to serve in the Royal Navy in that conflict. Unlike previous battleships their construction started after a fifteen year 'holiday' in battleship building brought on by the Washington Treaty of 1922.

At the 1935 Naval Conference attended by Great Britain, the United States and Japan, it was proposed that battleships, in future, be limited to 35,000 tons standard displacement, with 14 inch as maximum gun calibre. The participating countries had until 1st April 1937 to ratify the agreement. Failure to ratify by any of the parties rendered the agreement null and void. The United States had made no secret of the fact that they wanted 16 inch guns, and were prepared to wait until April 1937 before committing themselves to any particular calibre. In the event Japan did not ratify the agreement and the United States went ahead with 16 inch gunned ships. Britain, however, could not wait. Construction of battleships by European powers, not restricted by treaty, made it imperative that construction proceed immediately with new guns – always the governing factor in battleship construction – ordered no later than June 1936. These were 14 inch guns, as specified in the soon-to-be-aborted agreement.

In view of the lighter shell fired by the new ships – all other British battleships were equipped with 15 or 16 inch guns – as many as twelve guns were considered necessary if an equivalent broadside was to be achieved. These were to have been disposed in three quadruple turrets, a somewhat clumsy arrangement. The only quadruple-turretted battleships at the time were the French *Dunkerque* and *Strasbourg*, an arrangement adopted to reduce overall length and the size of the armoured citadel. To have placed the twelve guns of the King George V Class in four triple turrets would have also meant an increase in the length of both ship and armoured enclosure. During design, however, it was found necessary to work in more armour and, to compensate for the increased weight 'B' turret was reduced to a twin and the class emerged with only ten guns, two in quadruple turrets and one in twin turrets. Critics have, quite rightly, pointed out that a better arrangement at this point would have been only nine guns in three triple turrets.

The first two ships, *King George V* and *Prince of Wales*, were laid down on New Year's Day 1937, at Vickers-Armstrong (Tyne) and Cammell Laird respectively. On 5th May the *Duke of York* followed at Clydebank under her original name of *Anson*. On 1st June *Howe* was laid down at Fairfield under the name *Beatty*, and, finally, *Anson* on 20th July at Swan Hunter as *Jellicoe*. The renaming of *Beatty* and *Jellicoe* was initiated as the result of the controversy that still surrounded these names over ten years after the Battle of Jutland, and also in view of the fact that both Admirals had only recently died. If Admiralty policy had been strictly followed the name ship would have been named after the reigning sovereign, *King George VI*, but the King preferred to have his father remembered, and the *Duke of York* was named in recognition of King George VI's former title. None of these ships were ready when World War 2 commenced in September 1939.

King George V was the first to be completed. She was launched on 21st February 1939 and completed on 11th December 1940. She was followed by *Prince of Wales* (3rd May 1939 and 31st March 1941) and *Duke of York* (28th February 1940 and 4th November 1941). *Anson* and *Howe* were delayed by the urgent requirement for shipyards to repair and build escort vessels and were not completed until 1942. *Anson* was launched 24th February 1940 and completed 22nd June 1942, and *Howe* on 9th April 1940 and 29th August 1942. Both these ships were completed after the sinking of *Prince of Wales* in December 1941 so at no time were the ships all in service together.

The drawing shows *King George V* as completed in 1940. Part II will show later changes as well as some of the differences in detail between the five ships. The unrotated projectile (UP) mounts shown were intended as a weapon to be used against aircraft. They were twenty-barrel rockets with the rockets trailing a wire into which it was hoped the enemy plane would fly. They were a dismal failure and proved to be slow firing, heavy and ineffectual. They were replaced in December 1941 by 20mm guns. The 5.25 inch guns, on the other hand, were very fine weapons and could be used against both surface and airborne targets. *King George V* was the only one of the class to have an external degaussing cable, and this was removed in 1943.

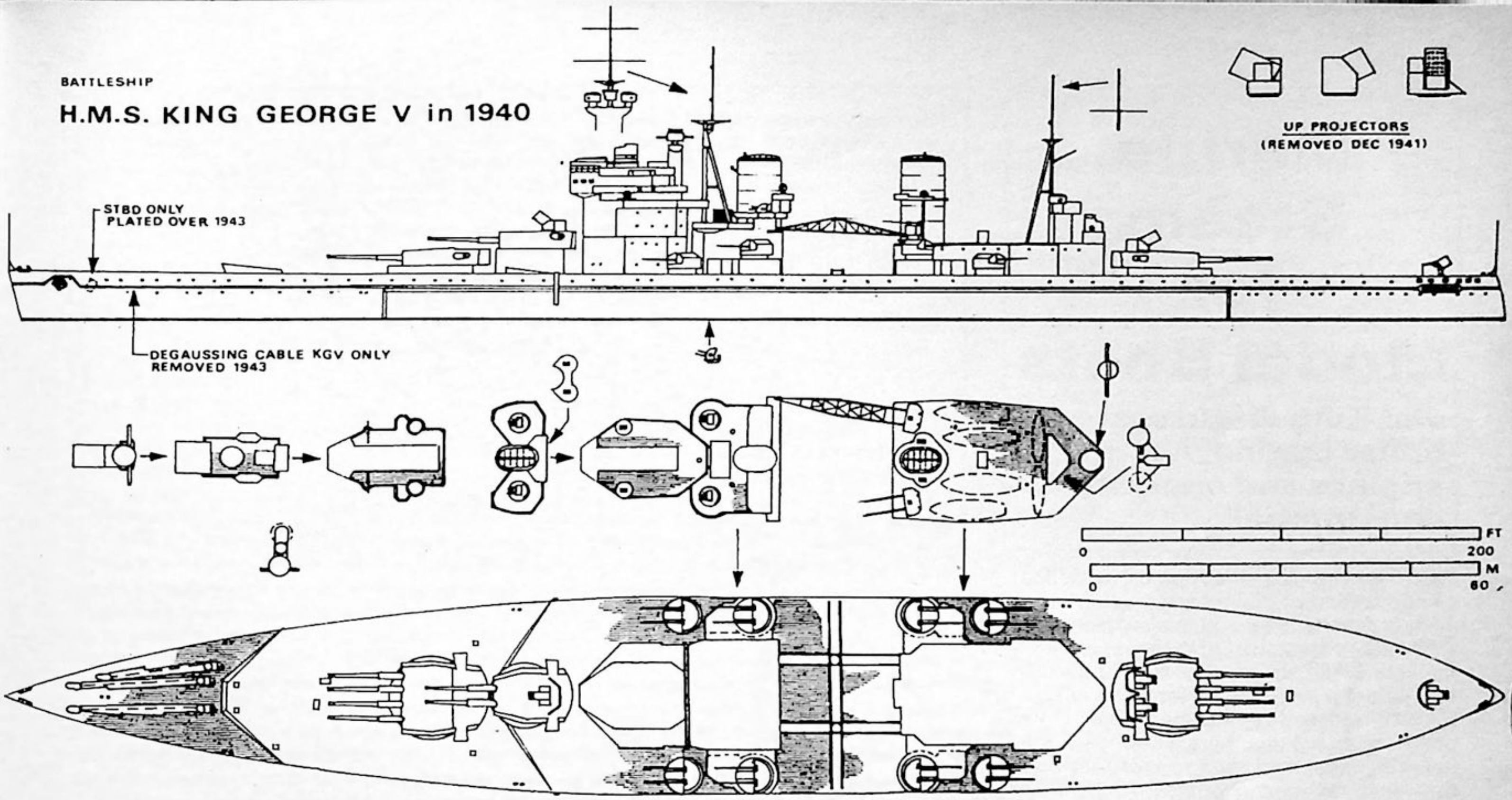
King George V first came into the news in January 1941 when she carried the British Ambassador, Lord Halifax, to the United States. The Americans were very impressed with the ship and thought she compared very favourably with contemporary American battleships. *Prince of Wales* accompanied *HMS Hood* in that ship's ill-fated encounter with *Bismarck* on 24th May 1941, and it was one of her shells which damaged the *Bismarck*, forcing her to immediately head for Brest. She was not in full fighting trim, her main armament turrets were giving trouble, and she still had dockyard workmen on board. It was left to her sister, *King George V*, flying the flag of Admiral Tovey, and accompanied by the battleship *Rodney*, to avenge the loss of *Hood* after a search and chase operation extending over three days.

In August 1941 *Prince of Wales* carried Prime Minister Winston Churchill to his historic meeting with President Roosevelt at Argentia, Newfoundland on 9th to 12th August 1941. From this meeting came the Atlantic Charter. After a short spell in the Mediterranean, *Prince of Wales* was transferred, with the old battle cruiser *Repulse*, to Singapore. The two ships were intended as a deterrent against a possible Japanese attack. When that attack came on 7th-8th December 1941 the two ships sailed to intercept a Japanese troop convoy approaching the coast of Malaya. They were discovered by Japanese aircraft on 10th December 1942 and, after a number of sustained bomb and torpedo attacks, both ships were sent to the bottom. Their sinking came as a tremendous shock for this was the first time that a battleship, in full fighting trim and capable of high speed manoeuvre, had been sunk entirely by air attack.

Next month we shall conclude the operational history of the class, and provide details of the various changes, and differences in detail, which distinguished the different ships. The drawings next month, therefore, will be supplementary to, and should be referred to in conjunction with, this month's plan.

Details of *King George V* on completion were:

Built:	Vickers-Armstrong (Tyne), Jan. 1937 to Dec. 1940.
Displacement:	36,727 tons (std); 42,076 tons (full load).
Machinery:	110,000 SHP=28 knots.
Armament:	10 – 14 inch; 16 – 5.25 inch DP; 16 – 2 pdr pom-poms; 4 – 20 barrell UP projectors.
Aircraft:	4; 1 catapult.
Complement:	1,422.


BATTLESHIP
H.M.S. KING GEORGE V in 1940
UP PROJECTORS (REMOVED DEC 1941)
STBD ONLY PLATED OVER 1943
DEGAUSSING CABLE KGV ONLY REMOVED 1943
FT
0
200
M
0
60

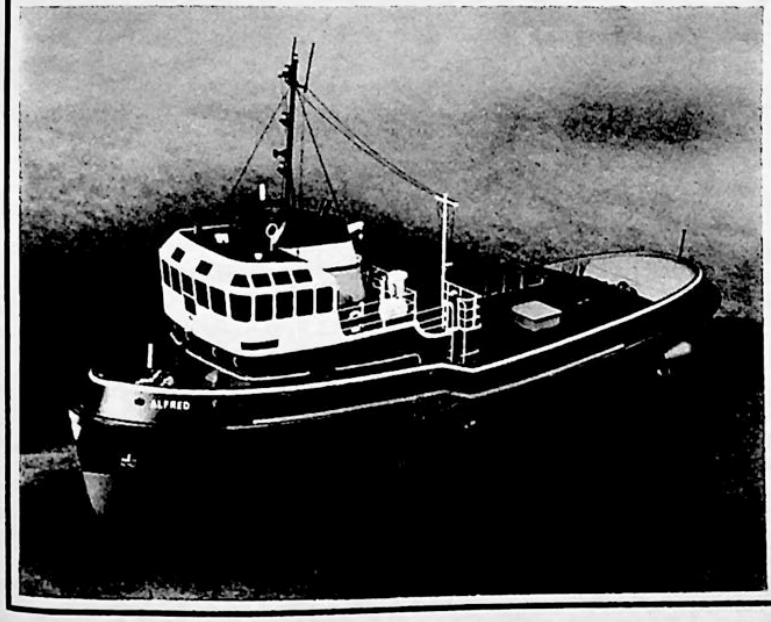
For colour schemes the reader is advised to consult *'Ensign 1, King George the Fifth Class Battleships'* by Alan Raven and *'Royal Navy Warship Camouflage 1939-1945'* by Peter Hodges, both of which give details of camouflage. On completion *King George V* was painted dark grey (Humbrol HN 2) with black waterline, and planked decks where shown.

Next month: King George V Class – Part II.

TUG ALFRED

NOW AVAILABLE

Length 24in, Beam 6¾in, Displacement 6½lbs



- Scaled from Alexandra Towing Co. Drawings
- Approximately 300 parts
- Pre-cut Ply & Balsa parts for Hull and Superstructure
- Over 70 Metal Fittings
- Special 6-volt Electric Motor
- Toothed Belt reduction drive
- Operating Kort Nozzle
- Detailed Plans on 2 large sheets
- Motor and all Fittings included
- Ample space for 1 or 2 Channel Radio Control and lead-acid or Nicad Batteries

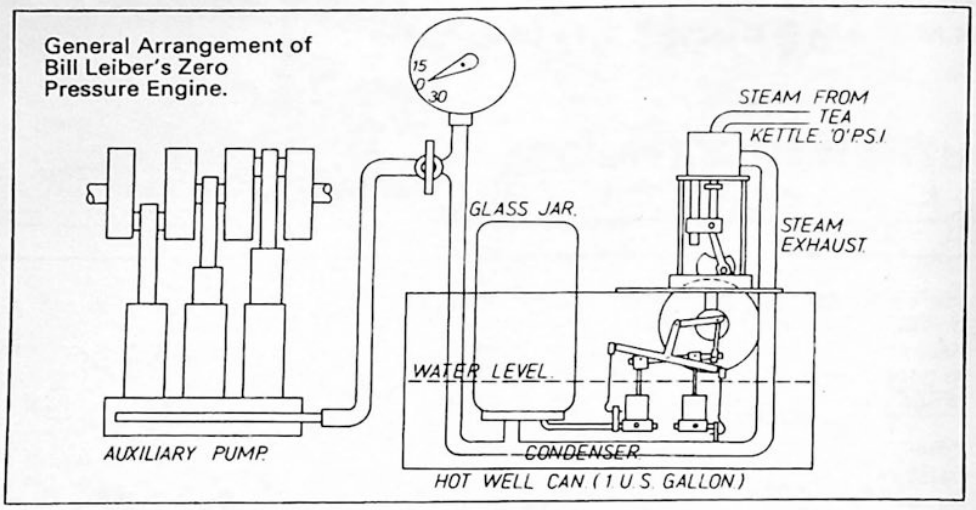
ALL THESE FEATURES FOR ONLY
£38.95

H. A. BLUNT & SONS LTD.
133 The Broadway, Mill Hill,
London NW7
Phone your Access or Barclaycard number
Tel: 01-959 2877
Trade enquiries to A. A. Hales Ltd.

Marine Steam for Model Boats

Jim King discusses boiler testing, hot air engines and crankshaft construction.

General Arrangement of Bill Leiber's Zero Pressure Engine.



THE new rules of the Model Power Boat Association requiring the testing of boilers are causing a few unforeseen problems and several letters on this subject have been received. As they primarily relate to use of these rules it may be felt that the letters could be better answered in the 'Propwash' column but essentially they are of major interest for all steam users, as many follow the MPBA's lead, and live steamers tend to read this column before the other one. In replying here we will try not to bore the disinterested general reader and thus reduce that oft repeated criticism that there is too much talk of steam.

A typical letter was received from North London's Tom Pinnock while I was overseas and since he is, if he will pardon my saying so, one of the veterans with long experience, his words are always worth listening to. I will quote Tom in full as is my wont in such matters:

Dear Sir,

I am all in favour of the testing of model boilers – though in fact their safety record is surprisingly good – but I cannot feel that the Southern Federation proposals, designed for testing model locomotive boilers, are really appropriate to our needs in the model boat world.

I assume that no-one would wish to "rub-out" the simple "toy" steam plant as made by Mamod and others, and I am certain that these are quite safe – but I do not think they would pass the proposed test "Without distortion" – which, under the rules, would condemn the boiler.

I myself have a boiler of similar scantlings, which, at 125 p.s.i. developed domed ends.

Secondly, the proposals are quite inappropriate to the "flash" or monotube boiler used, not only for racing hydroplanes, but also for prototype craft, and which is often considered to offer very great scope for development.

Finally the proposal (No. 6) as to the ability of the safety valve to cope ". . . however hard the boiler may be worked" is quite appropriate to a solid fuel boiler – where the fire is limited by the size of the firebox – but hardly to a marine job that may, at different times, be fired by a meths burner, or a fierce paraffin blowlamp.

No, I am all for safety, but let's have regulations to fit our needs – not the other way round.

T. W. Pinnock

Fair enough, but let us get the whole thing straight from the beginning, and for everyone's guidance it might be as well if the new rule is quoted in full, for if precedence is anything to go by then other organisations, Naviga? for instance, may follow the MPBA's lead.

Rule 1(8) reads:

"All boilers and pressure vessels in craft used at regattas under MPBA Rules shall hold current test certificates. Boilers and pressure vessels shall be tested in accordance with recommended minimum requirements as shall be enacted by the Executive Committee."

The rule is pretty concise and as you can see can readily be varied in the light of further experience. It does not really set out to eliminate any type of boiler, least of all those readily obtainable on the open market, and it would be hoped that the manufacturers of these would cooperate in helping the MPBA in their drive to ensure that model boaters, particularly those who have not the expertise to build their own equipment, can be reasonably sure that boilers bought will be in accordance with the safety requirements.

The fact that in the first instance the Southern Federation's rules were quoted did not mean that they were to be followed slavishly, but as the Federation has been conducting tests for a number of years, and the object and the methods must in all fairness be the same, does mean that to take note of and use and adapt them to our own requirements will ensure that a minimum of time is wasted in setting up our own procedures. At the time of writing, March, a schedule is yet to be issued, and a small committee is to put this together for use in the coming season. Be assured that the schedule issued will not eliminate any boiler that is safe to use. If a boiler is not safe to use within the limits that will be proposed then for everyone's sake, including the owners, I am sure you will agree that it should not be seen in public.

So much for the restrictive rules we have to be lumbered with in these modern times. How nice it would be if the need for rules and regulations was not necessary but there it is, a way of life. From pressure testing to something in the exact opposite direction greeted me when I opened a letter from Bill "Steam-Can-Boiler" Lieber of Port Washington. Bill goes from one end of the spectrum to the other, for in this last epistle he describes a "negative pressure" plant. Yes, no mistake there, for in effect he has been experimenting with atmospheric engines, but again, let's have the story in his own words:

Dear Jim,

Recent experiments emulating Newcomen and Watt have been instructive and interesting. Their first steam engines operated by filling a cylinder with steam which was then condensed by a water jet. The resulting vacuum caused the piston to move down by atmospheric pressure. This principle seemed worthy of investigation so I set to work developing an atmospheric steam engine. My object was to make it run with steam at zero P.S.I. This is more a steam engine tale than a model boat story but it may interest advocates of steam power. It may even abet the use of fragile containers for boilers, containers hitherto condemned for this use.

A double acting single cylinder engine of ⅝in bore and stroke was available. A pump was built to evacuate condensate and residual air from the condenser and geared to the engine five to one. This pump has two single acting ⅜in bore and stroke cylinders actuated by a walking beam and has mechanically operated tapered plug valves for positive action. It is submerged in the hot well to prevent air leaking in. The hot well is a one gallon can which also serves as a base for the engine and condenser assembly. A glass jar gives visibility so that water level can be monitored. Condensing takes place in a submerged copper tube between the engine and this jar. A gauge calibrated to thirty inches Hg vacuum and one hundred and fifty P.S.I. pressure indicates operating conditions. An auxiliary three cylinder hydraulic pump was used for the initial vacuum when starting up but was turned off when the engine driven condenser pump took over. The steam was supplied by an open teakettle with the steam line poked down the spout. The sketch shows the general arrangement. Photo No. 1 shows the engine in operation, the gauge indicating fifteen inches of vacuum and the auxiliary vaccum pump shut off. Excess steam is faintly visible rising from the teakettle. The pie plate catches initial condensate because my wife gets upset when I slobber up the kitchen floor. Photo No. 2 shows the engine and pump removed from the hot well.

At seven and a half pounds differential pressure this power plant could not be expected to do much work but it did demonstrate that it could be done. It would be ironic if critics of beer cans installed them as boilers in their most treasured scale models. Of course they would have to be tested and there would be a bit of humour in having the testing authority use a pressure gauge very accurately calibrated to zero pounds per square inch pressure and carefully testing the boiler to twice that. Safety valves could be dispensed with, in their place would be an open vent to the atmosphere saving both weight and expense.

BILL LEIBER

It is a pity that we cannot reproduce the pictures mentioned which were coloured, and I would ask correspondents to send black and white photos if at all possible, but in all cases the better the picture the more chance of reproduction. I don't think that many will copy Bill's idea for the power output must be small, but as a departure from the normal run of the mill this must be of interest to many.

Not quite live steam but some of you may have read on the pages of our sister journal, *Model Engineer,* of some trials I have made with a Solar Engine, first in Arizona and California and then in the wintry wilds of Hertfordshire. In essence this is a hot air engine coupled with a parabolic reflector that concentrates the sun's rays on the heat cap of the engine. No, I am not suggesting that we try out solar heating on our boats but since there is some affinity between hot air engines and steam it might be of interest if anyone has used hot air engines for propelling boats. I know that some people in the past have tried it and as soon as I can get some of that precious commodity – time – I intend to modify the solar engine to drive a boat. It won't be very efficient but could be the basis of some experimentation with a view to improving the breed and let us face it, these engines are even quieter than steam. *(Basil Harley is already experimenting and will be reporting progress in the near future — Ed.)*

Crankshaft Construction

One of the many questions that were asked of me at the M.E. Exhibition and which indeed have been raised a number of times before and since, concern the machining of the crankshaft in the Stuart Single and Double Ten Engines. Now I don't know the composition of the metal supplied in the casting sets for this item, but I do know that on each occasion I have attempted the machining I have come up against similar problems to those experienced by my correspondents. The shaft is a steel forging, and although the method expounded by Andrew Smith in his book on the subject is the one generally accepted for machining crankshafts, the first difficulty to be encountered is in centre drilling the ends and one has to file a reasonably flat surface before attempting this. Again, the shaft is not usually round enough to be put into a self-centreing chuck and the four-jaw is the tool to use, which does not make life any easier. When it comes to turning the item, most people, yours truly included, find that without any effort and even when being most careful, the shaft will distort at the first inclination, and I have come to the conclusion that the best way to make the crankshaft is to fabricate from stock material. Now I am perfectly aware that by saying all this I will have a number of people, (Stuart's, Andy Smith etc.), blasting my ears off but I am unrepentant. I might add that the ready to assemble engines sold by Stuart Turner make use of a pre-fabricated crankshaft and not one turned from the forging. At least all those I have seen do, so it must be a more economic and therefore an easier operation to make the crankshaft up from pieces.

Now there is no great difficulty in making a crankshaft up from pieces and it is a very common practice. Like everything else, a little care is needed and to make a shaft suitable for the ST10, just five pieces of material are needed. Take a look at figure 1 which shows a section through a shaft in course of fabrication. The crank webs are first made from bar material, $\frac{5}{32}$in x $\frac{3}{4}$in, and with the coming of the metric system there may be some difficulty in getting this size material, but both dimensions can be increased slightly. In the case of the thickness this will entail reducing either the thickness by machining or reducing the length of the bearings. Cut two pieces of the bar roughly to size and placing both together in the four jaw chuck, machine them to the correct overall length ignoring the curvature at the ends. Mark out one for the crank pin and shaft centres and place them back to back in the four jaw, centre up the marked shaft centres and bore. Since most people will find boring such small sizes difficult, the usual procedure is to deeply centre drill, drill undersize and finally reamer to size. Always remember two things, drills cannot be relied upon to produce accurate sized and round holes and reamers are only finishing tools, so the final cut should be a light one. Also the reamer should be allowed to float; by all means put the reamer in the tailstock chuck but turn the work by hand and guide the reamer in with the other. *Don't* run the spindle at high speed and *don't* feed the reamer in by using the tailstock handle.

Cut a piece of ground steel bar for the crank pin and turn to length, it should be a good push fit in the webs. Take another piece of bar, turn to length and centre both ends for the crankshaft, the length must be the overall length including the piece between the webs. This should be a good but easy fit in the webs. Assemble the pieces and in order to ensure that the webs are square and parallel, lay the assembly with the cranks on one edge on a flat surface to check. If you don't possess a surface plate and who does at one's early stage of model engineering, then use the lathe bed as a reference point. Incidentally, I have missed out on one important point and that is to clean all grease etc. off the pieces before assembling.

The next operation is to silversolder the pieces together and for this purpose ever popular Easy Flo and flux is favourite, let the shaft cool and don't go plunging it into water to cool off quicker for this is likely to cause distortion. Clean up with a wire brush and then cut out the piece between the webs with a hacksaw and finish

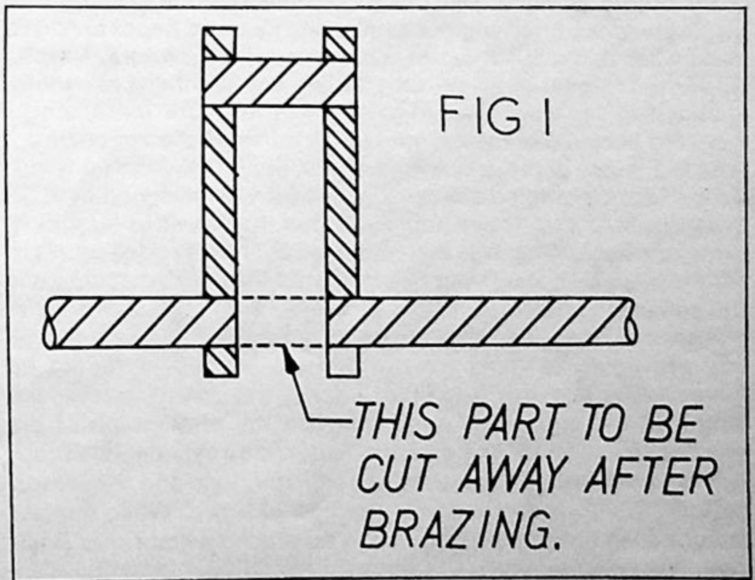


FIG I

off by filing. To check the true alignment of the shaft place between centres in the lathe and any major distortion will soon be seen. For those who possess a test dial indicatot (TDI), then judicious application with the lathe turning slowly will soon check the truth. For the not so fortunate, in most cases they will decide that visual observation is sufficient, and indeed as soon as the shaft is tried in the engine any vital distortion will show up, however if care is taken in the building process and particularly if cooling is allowed to take place slowly, then most people will make a success of this exercise.

It is possible to build a crankshaft without silversoldering and figure 2 shows the general scheme. The two pieces of the shaft and the crank pin have their ends turned down to a force fit in the crank webs. This set up is common in live steam locos whose wheels are usually fixed this way, but it has also become common practice to fix them permanently with Loctite. Sometimes the webs are pinned and again brazing is often resorted to for the final fixing, although I have not seen it done in such a small size as the ST 10 engine.

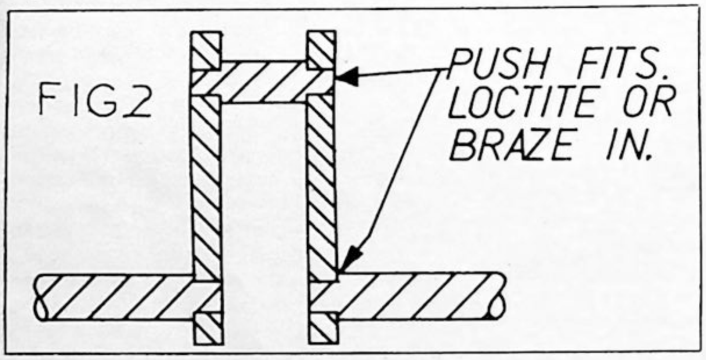


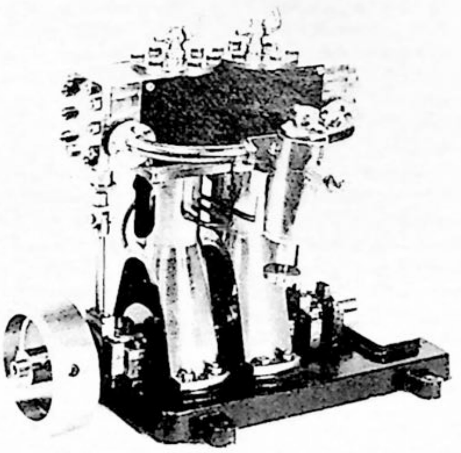
FIG2

The double-throw crankshaft for the Double Ten can be made in a similar manner, and if the shaft is placed on a flat surface as mentioned before, it will be an easy job to get the two cranks at 90° if the ends of the webs are left as they come from the lathe. Don't bore all four webs at one operation but treat them as two pairs. This will aid accuracy.

Many have built the Stuart engines and they rightly deserve their fine reputation, but they are not the only ones available to home constructors. At the present time I have just commenced work on a pair of similar engines, "Warrior's", these engines are to a design by old friend, the late Edgar T. Westbury, and are of ¾in bore by ⅝in stroke. The castings, which came from A. J. Reeves of Birmingham, are all in non-ferrous metals, a fact which has some advantage in marine work. I already have one of the engines made by Bert Perman (Smoky) but one does not use an engine made by such a craftsman in a boat but makes it a keepsake of how such work should be done. Like the ST Double Ten this twin cylinder engine was designed without a reversing gear and hopes are that a design for this will appear in the not too distant future. Anyone interested in getting away from the eternal ST 10 can be recommended to try their hand at this one, a lot more machining is required because of the design but for those whose appetites are whetted, a look at the drawing, MAP M7, may quicken this interest. To go with the engine a water tube boiler was designed by A. D. Trollope, MAP M4; I have not seen either the drawings for this, or one in the flesh. What was that remark about having open access to MAP's plans? – not on your life, they shut the door when they see me coming!

If anyone does build this engine, check the length of crankshaft you are going to need for the dimensions shown should be increased by one inch overall, and it may pay you to increase the length at the pump end even more. In the photograph of the Warrior you will notice that each cylinder has a cylinder head cock which serves both the purpose of a cylinder drain and a means of putting oil into the cylinder at the end of a run. While the last feature does not matter so much in an engine with bronze cylinders, it is an advantage to fit them on the ST 10 and Double Ten, where the cylinder and steam chest are of cast iron. General lubrication of the cylinder while running is taken care of in the usual way by a displacement lubricator, but one of the new Warriors will be fitted with an oscillating cylinder lubricator, well geared down, for I feel that his type of lubricator is more suited to long runs such as the R/C boat is likely to have and it must surely be the aim to increase the cruising range for R/C work in order to gain added realism.

The Warrior engine, ¾in bore by ⅝in stroke, designed by Edgar T. Westbury and built by Bert (Smoky) Perman.



Steam–Electric Generation

I noted with interest the letter from Mr Hodgson of Grange over Sands in the April issue and to those who like him have tried something unusual, may I say that no matter what the purists think let us have some more letters in a like strain. I have seen the suggestion in American magazines, but this is the first time that someone has tried the idea and proved it worthwhile to my knowledge. So thanks Mr Hodgson and hours of happy sailing or should that be steaming. I would suggest that he puts a simple cock, as readily obtainable from Stuart's in the steam line, for to release the pressure with the whistle is wasteful of steam. In one article on this subject I read, it was suggested by the author that the single cylinder in a boat should drive a generator and in turn this would feed current to a motor on the prop-shaft, a set up that I doubt would have been very succesful for engines as generators and motors in such a small size are never very efficient. For those older readers who remember the Tilling Stevens bus of pre-war days it may seem a familiar set up. For the younger reader, these buses had a generator driven by a petrol engine and drive was to the road wheels by electric motor. They were distinguished by a notice inside which said "This bus does not jerk on starting because it is a Tilling Stevens Petrol Electric Vehicle". They were not a great success as the power weight ratio was too low. Many of them wound up on fairgrounds as portable generators-cum-tractors. To use the same idea in a small boat would seem somewhat futile although in full size there have been both Turbine-electric and Diesel-electric transmission systems.

Of course there have been many suggestions made as to how to reverse the drive of a single cylinder engine, among them reversible props, Kitchen rudders and the like. Most people who make the suggestions ignore the fact that if the builder was capable and had the workshop facilities to build such items he or she would build a double cylinder engine with full reversing gear anyway. For those who want, for some reason or another something a little more simple, then this is one very good solution.

There is a lot to be said for using a slip eccentric once the reversing problem is overcome, for the valve event can be set to be most efficient in conjunction with a suitable port layout for marine work. It is not entirely eschewed in the model loco world, for if you ever see a man running a loco on an up-and-down track and at each end of the run he leans down and gives the track a pull, it's a pound to a penny that the loco has slip eccentrics.

MODEL RACING HULLS

Partners: G. & S. POLLARD

58 KNOLL CRESCENT, HAMPDEN PARK, EASTBOURNE, SUSSEX BN22 9DP
Telephone: 0323 53327

DESIGNERS AND MANUFACTURERS OF WORLD ENDURANCE, NATIONAL ENDURANCE AND NATIONAL SPEED G.R.P. BOATS

NEW DESIGNS FOR '79

In the next few months M.R.H. will be releasing a complete new range of high performance multi racing boats setting new standards in design and manufacturing, plus a new range of colours for the boater who wants to be different.

NEW! SILAK 7. We need not say anything about Silak 7, the results of the 78 World Championships speak for themselves. This updated and improved version of Silak 7 is now readily available from us at a sensible price. PRICE: Hull and Deck unjoined **£25.70p.** Hull and Deck joined **£28.73p.**

NEW! MINI SILAK 7. A reduced version of the Silak 7 which is ideal for the new breed of high performance 3½cc motors, geared or direct drive. PRICE: Hull and Deck unjoined **£18.11p.** Hull and Deck joined **£20.41p.**

NEW! TROJAN 21. This is a completely new design and concept in 3½cc boats. The basic design is a deep vee with two large strakes to give the boat lift and stability. Trojan 21 may be considered large for 3½cc engines but the prototype powered by a K&B 21 direct drive proved to be faster than any current 3½cc boat. Its size enables it to be built with large fuel tanks and radio box, plus the installation of tuned pipes under the deck. PRICE: Hull and Deck unjoined **£18.11p.** Hull and Deck joined **£20.41p.**

Please send Stamped Addressed Envelope for Technical Data Sheet on all our Products and Colour Range.

If you have difficulty in obtaining any of these new designs from your local model shop try our Direct Mail Order Service for fast deliveries.

All Prices include VAT, please add £2.00 P&P when ordering direct.

THE SHIP SHOP

THE SPECIALIST SHOP FOR ALL MODELLERS OF SHIPS AND BOATS

HULLS
Hood the huge 9 feet £48.60 now with main turrets available £12.96. Cervia Tug 54", Zwarte Zee 54", Streamlined Tug 43" (U'hill plans) all £26.00. Also large selection of JB Mouldings and Kingston all fibreglass. Plus Duplex Styrene and now MAP Boston Blenheim £4.95.

PLANS
A & A Warship plans are back again and in stock (list 25p). Also Underhill (catalogues–sail 85p, power 65p). MacGregor (catalogue 50p), Jecobin, Conway and MAP. P&p extra.

TIMBER
Apple, Pear, Holly, Cherry, Box, Ebony, Yellow Pine, Lime, Degame/Lancewood, Jelutong plus strip Mahogany, Walnut etc. Send 9p stamp plus SAE for lists.

RADIO
New Acoms 2 Channel – 2 Servo Radio in Stock. FANTASTIC VALUE £53.50
Also STAC-4Ch-3S £99.50

TOOLS
Vibrosaw £45, Dremel Saw Bench £65.88, Expo Drills and accessories, X-Acto, Proportional Dividers £19.78, Hand Vice £5.70, Pin Chucks, Vices, Tweezers, Drill Bits 0.3mm-1.6mm 40p each, Archimedes drills £2.45, Fret Saws and Fret Saw sets, Model Hammer 68p. Airbrushes, dental mirrors £1.30.

KITS
Massive selection of static period ships working scale vessels and yachts. Also extensive range of period ship fittings, (List 25p+large sae). Plastic kits include Heller, Imai, Otaki. Blue Devil 36" Destroyer £15. Plus 1:700 waterline – all I can obtain, I stock. Also Italaerei 1:720.

BILLINGS
We are a Billings Main Agent. All kits stocked. Some examples:
Cutty Sark £16.25 (Fittings £30.00); Smit Tug £29.00 (Fittings £38.00); Norske Love £18.50 (Fittings £25.00); Nordkap Trawler £21.00 (Fittings £23.95); Toulonnaise £21.00 (Fittings £24.75); Meta £18.00 (Fittings £22.50); Lilla Dan £8.75 (Fittings £9.50); Golden Hind £26.00 (Fittings £22.50); Bluenose £11.95 (Fittings £12.95); Dragen Yacht £10.65 (Fittings £10.25); Viking Ship £10.35 (No Fittings). Also most fittings available separately, such as rigging, blocks, deadeyes, winches, stanchions, cannons, portholes, etc.

BOOKS

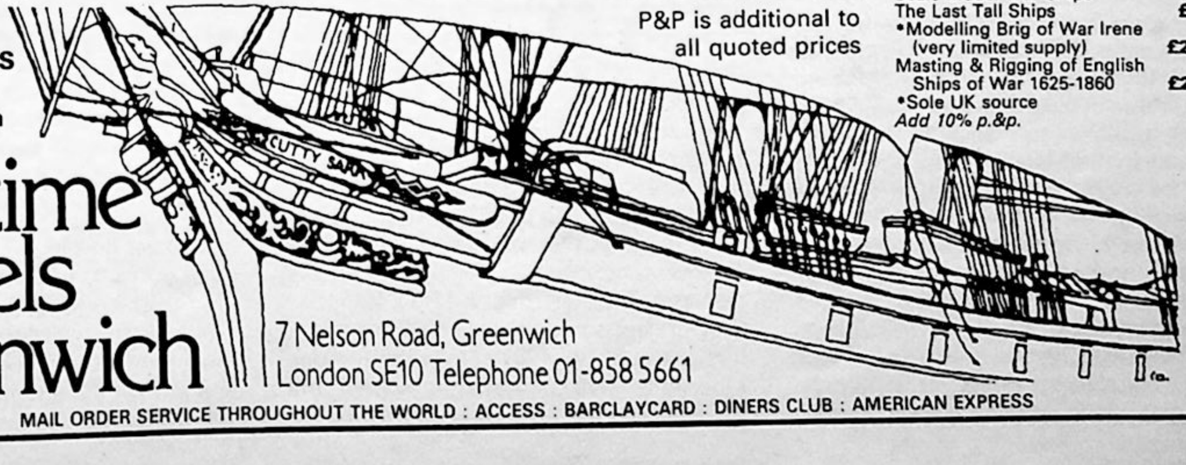
Speedy Cutter – Book & Plan		**£3.50**
Plank on Frame, Vol. I	U'hill	**£5.70**
Plank on Frame, Vol. II		**£6.30**
The Anatomy of Nelson' Ships		**£10.50**
The Cutty Sark – Ship & Model		**£5.00**
Mod'ling Thames Sailing Barges		**£3.50**
Destroyer Weapons		**£7.50**
Wooden Fighting Ship		**£7.50**
Metal Fighting Ship		**£7.80**
Ensign Series 1-8 (per copy)		**£2.70**
Man O' War Ser. 1 (County Class)		**£2.95**
Ships of the Past		**£5.50**
Frigate Constitution and Other Ships		**£5.50**
The Baltimore Clipper		**£5.50**
Building & Detailing Model Sailing Ships		**£1.50**
Masting & Rigging Clipper Ships		**£8.25**
Scale Models in Plastic		**£7.50**
Sailing Trawlers	Edgar March	**£12.50**
Sailing Drifters		**£12.50**
Scale Model Sailing Ships		**£6.50**
Scale Model War Ships		**£7.50**
The Last Tall Ships		**£8.50**
•Modelling Brig of War Irene (very limited supply)		**£27.00**
Masting & Rigging of English Ships of War 1625-1860		**£20.00**

•Sole UK source
Add 10% p.&p.

HOLIDAY CLOSING
We will be closed and away on holiday from Sunday May 20 until 9.00am Friday June 1. The telephone will be transferred to another number where messages can be left.

P&P is additional to all quoted prices

OPENING HOURS
MON-SAT
9.00am-6.30pm



Maritime Models Greenwich

7 Nelson Road, Greenwich
London SE10 Telephone 01-858 5661

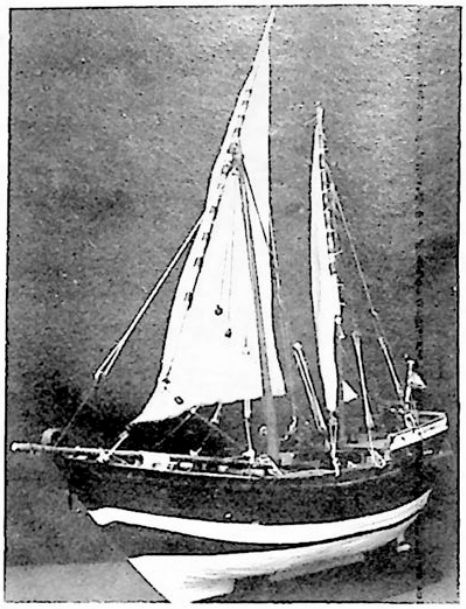
MAIL ORDER SERVICE THROUGHOUT THE WORLD : ACCESS : BARCLAYCARD : DINERS CLUB : AMERICAN EXPRESS

KOTIA

An ocean-going sailing vessel described

by

Iain Ogilvie



KOTIAS are ocean going vessels and are built on the coasts of India, plying in the west, as far as Zanzibar, the Red Sea and the Persian Gulf and in the east as far as Singapore. They are also built by Arabs and by them they are called Ghanja. As the Arabs have no timber of their own, they will often buy a Kotia in India and bring it to Arabia with a first cargo of timber with which they will build another.

This boat is square sterned, as most Indian and Arab boats are. Until the fifteenth century, they were sharp sterned but with the coming of the Portuguese to the Indian Ocean, the sterns were made square, in imitation of the Caravels. There is a distinct resemblance between the Kotia and the Caravel. Another modification from Europe is the projection at either side of the stern at deck level, which is derived from the galleries which were built at either side of the poops of later galleons.

This ship was measured up in 1956 when it spent about a fortnight in Bombay harbour, having a refit. The drawings of it were then made and from them, a model was made to the scale of four feet to the inch. The method adopted in the making of the model is described hereunder.

Kotias are built entirely of teak, and the same timber was used for the model. All pieces were cut out with a treadle fretsaw. A Black and Decker drill, with a fretsaw attachment could also be used and might in fact be more convenient. In the actual shipbuilding, ribs are made from selected naturally curved timbers, but for the making of the model they were also cut out of plain board.

In the description which follows, dimensions are given in the size of timber used in the ship so that they will apply whatever scale is adopted for the model.

Building the Model

From an ordinary board, cut out the plan of the deck inside the gunwhale. Shape the top of this to the reverse curve of the deck by thinning it down at both ends. Fix two blocks behind it, so that when placed on the work bench, the surface of the stern end is at least 8in above the bench. Paste onto the surface, using some weak glue like Gripfix, a sheet of paper. Do not put the paste over the whole surface but only enough to keep the paper in position. Now draw the plan of the deck timbers on the surface of the paper. Now cut out the deck timbers and lay them on the paper in the position shown. Fix them in position with two small spots of glue. Use a plastic type of glue which can be squeezed out of a tube. The two timbers aft of the after hatch and the two timbers between the hatches are 12in x 12in, the six timbers at the stern and the five at the bow are 6in x 6in and all others are 9in x 9in. They should all be cut over length, so as to project about 2ft beyond the edge of the plank.

As a template for the construction of the hull, get a block of expanded polystyrene and shape one side so that it will lie neatly over the deck planks. Shape the block to form the space between this and the inside of the hull. This can be done roughly oversize with a saw and finished off accurately with a rasp file. To get it accurate, make half a dozen carboard templates from the formlines on the drawing, cutting them 10in under size, to allow for 8in ribs and 2in planking. These can be used to check the size of the block.

Now assemble the stern post and the transom. The stern post is 12in x 12in. The first five transom timbers below the water line, are cut from 12in x 6in with the sides tapered to give the necessary curve, the second and third are slotted to fit the stern post and the fourth and fifth are in two parts. Then fit the six ribs, shaped to give the correct curve to the transom and plank the curve with 12in x 12in planks. The outside ribs are now fitted and the planking completed. The ribs are 6in wide and from 6in to 10in deep according to the curve. In the shipyards, planks are fixed to ribs with wooden pegs, but for the model glue is used, both between the plank and the rib and between the edges of the planks themselves. The semicircular top of the transom is made in three pieces and glued onto the transom planking. Cut the transom planking over length and then cut round it to the correct shape with the fretsaw.

Now build the keel and the stem post. Both are made of two 12in x 12in timbers, one above the other. Each stem post timber laps in front of the corresponding keel timber. Cut the end of the stern post to the correct angle and glue it onto the keel. Another 12in x 12in timber then joins the stern post to the keel at the angle of the under side of the hull and the space between it and the keel is filled with 12in x 12in timber. Two tapered 12in timbers are then fixed behind the stern post to give a vertical rudder post on which to fix the rudder.

Place the transom, keel, sternpost assembly, keel uppermost above the polystyrene template. Support it on the centre piece of the alternate ribs which should be glued to the keel and which will keep it in the correct position.

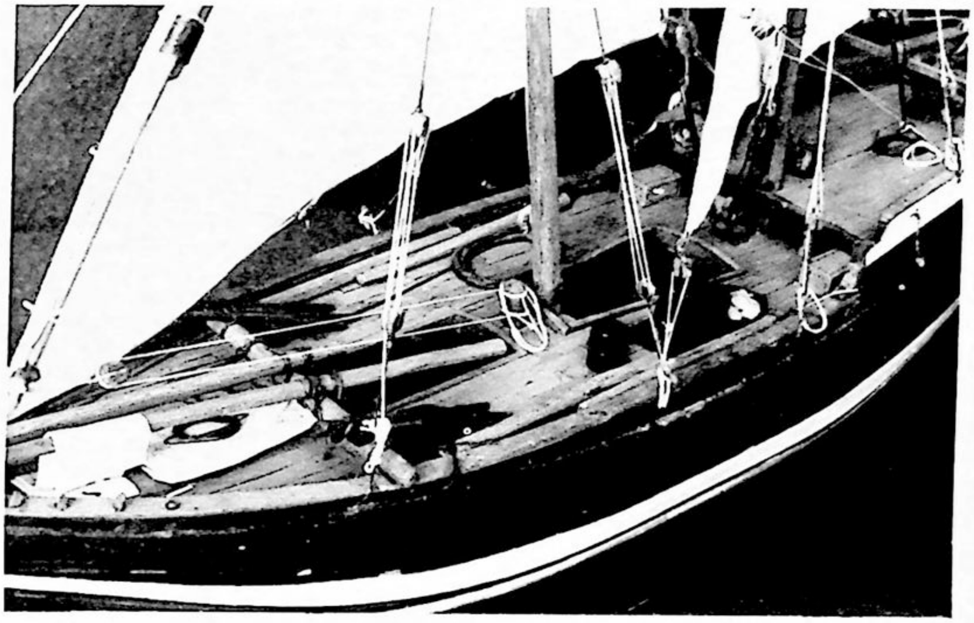
Ribs are now cut out. They are cut out in pairs so as to ensure that opposite ones are the same shape. Ribs are of 8in x 8in timber. Draw the shape, obtained from the form lines on a piece of plank 17in thick and cut out the length of rib with the fretsaw. Then split it down the middle losing

1in from the saw cut and leaving two 8in ribs. Alternate ribs are made in four and five sections.

Planking

Planking can now begin. All planks are cut from 12in x 2in timber. As planks will not run the full length of the ship, they must be butt jointed over the ribs. The joints are cut diagonally at 45 degrees, with the upper end of the joint forward. To cover the shape of the hull they will sometimes require to be tapered in width and this can be done by filing the edge. To taper them wider, advantage is taken of a butt joint. The end of a 12in plank is butted onto two planks tapered to 6in and these can be tapered out to 12in. Planks can be held in position on the ribs until the glue sets, by elastic bands, passing over the projecting ends of the deck timbers and over the keel. Blocks of wood will have to be inserted to hold down the planks near the keel and towards the stern. The end of planks abutting the stem post must be held onto it with bulldog paper clips. A rebate, 2in x 2in must be cut along the upper edge of the stem post, along the edge of the keel as far as the sloping timber, and up the edge of the sloping timber, to accommodate the edge of the adjacent planks.

First all the planking next to the keel, as far as the end of the centre portion of the alternate ribs already fixed, is glued on. Then the first portion of the intermediate ribs is glued to the planking so far fixed. Then the planking is fixed up to the end of these and so on, until all the ribs and the planking up to the under side of the deck timbers has been fixed. The spacing of the ribs is half the spacing of the deck timbers and they run at right angles to the keel. Those crossing the stem post are slightly closer so that they slope progressively further forward to meet the corresponding deck timbers. The last section of the rib immediately astern of the after 12in x 12in deck timber is 12in x 12in and extends 6in x 6in above the deck timbers. The final plank below the deck timbers, extending from the bow to 22ft from the stern is 8in x 4in.



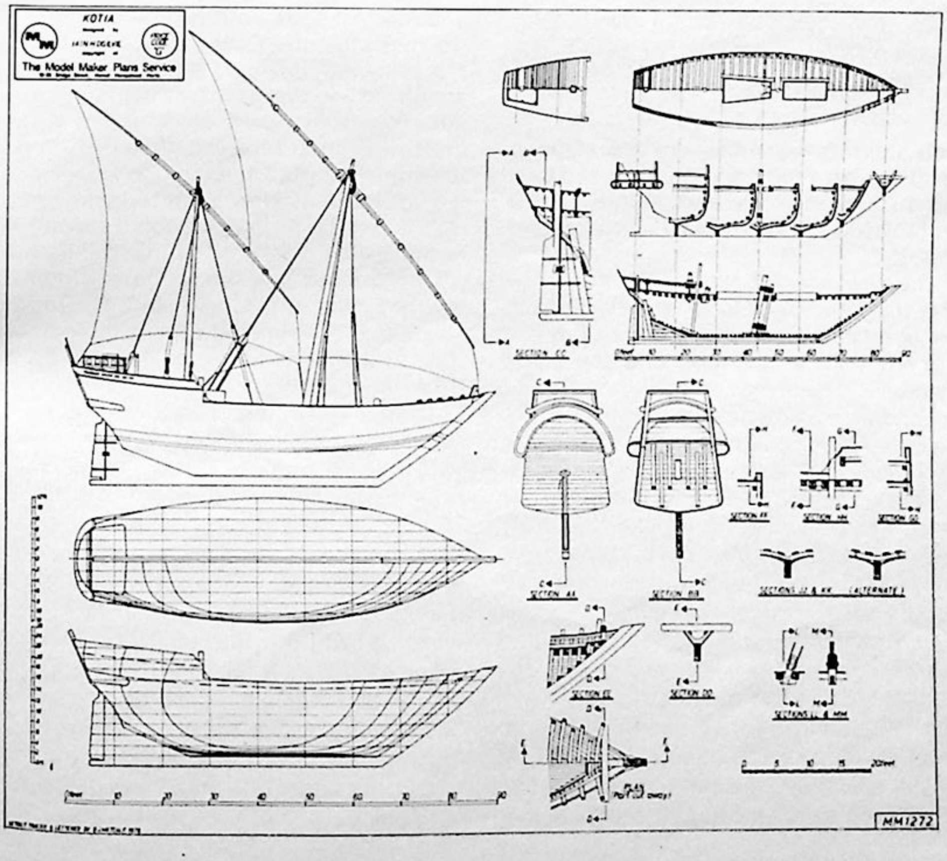
At this point the whole ship is lifted off the base plank and any paper left adhering to the deck timbers is scraped off. The polystyrene mould is cut up using a knife between the deck timbers and removed. The protruding ends of the deck timbers are cut off flush with the outside of the ribs.

Now fix the internal horizontal timbers. They are 9in x 2in except for the one immediately below the deck timbers, which is 6in x 6in.

The anchor post for the main halyard is now fixed as detailed on the drawing. It contains 4 shieve blocks, but for the model, only one is installed, 8in thick. Two timbers further back, a backing timber is placed below the deck timbers with a hole in it, to take the lower end of the spindle below the capstan. The mizzen halyard is anchored to a rod, the lower end of which passes through the aftermost 9in deck timber. For this use a stiff piece of wire passed through the timber and bent over below to anchor it down.

The rudder is now put in place. It is held by a metal pin, passing down through the lower end into the extended end of the lower keel timbers. It passes through the transom to a height of 5ft above the deck timbers. It is also fixed to the rudder post on two pintles. The metal straps holding these can be cut out of a tin and the actual pintle made from a cut off nail. Between the pintles there are slots cut in the rudder and the rudder post. A rope lashing is pas-

FULL SIZE COPIES OF THIS PLAN REFERENCE MM1272 ARE AVAILABLE PRICE £2.30, (CODE G) PLUS 30P POST AND PACKING FROM MB PLANS SERVICE, PO BOX 35, BRIDGE STREET, HEMEL HEMPSTEAD, HERTS HP1 1EE. OVERSEAS READERS MAY OBTAIN COPIES FROM THEIR LOCAL AGENTS.



sed through these to hold them together. A box is now built round the rudder from where it passes through the transom to the level of the poop deck.

Coamings are now built round the hatches, using 12in timber. The whole is now decked out with 12in x 2in timber, glued down to the deck timbers. A timber is now fixed in the angle between the deck and the ribs, right round the whole deck. It is a 4in x 4in, rounded off on the upper inside edge.

A 16in x 9in timber is then fixed across the boat to form the front edge of the poop. The upper edge of this is 3ft 6in above the deck. From behind this to the stern, a 4in x4in timber is fixed to the ribs to support the timbers of the poop deck. The first two of these are 6in x 6in timbers, placed directly above those of the main deck. The timber holding the mizzen halyard tie-down is also 4in x 4in, and all others are 4in x 3in at 6in spacing. Now deck out the poop and fix another 4in x 4in round it, as for the main deck.

The outside planking is now fixed up to the gunwhale level. The top of the gunwhale is cut out from 3in planks, joined together with a diagonal splice.

The forward pair of ribs are now cut off 3ft 6in above the deck and rounded off. A 12in diameter pole 11ft long , is then fixed horizontally behind them, the combination forming a fairlead for the anchor cable. The next 5 ribs terminate 12in above the gunwhale. A 12in diameter pole is then mounted on the gunwhales right across the ship, just forward of the forward hatch, to form a horse.

On the poop the capstan is mounted. About halfway along the side of the poop, in the side of the ship, two 9in x 9in timbers are erected vertically, projecting 7ft above the poop deck and capped with another 9in x 9in timber across the ship. A timber is also laid across the top of the extended outside ribs, already fixed to the transom. These are to support the spars clear of the deck when they are lowered.

Steering is by a wheel. To achieve this, mount a short tiller on the rudder, just above the deck and pointing aft. The wheel on the end of a spindle, is mounted above the tiller, on two brackets on the deck. A rope is wound round the spindle and the ends led through snatch blocks at the side of the ship and led back and fixed to the tiller.

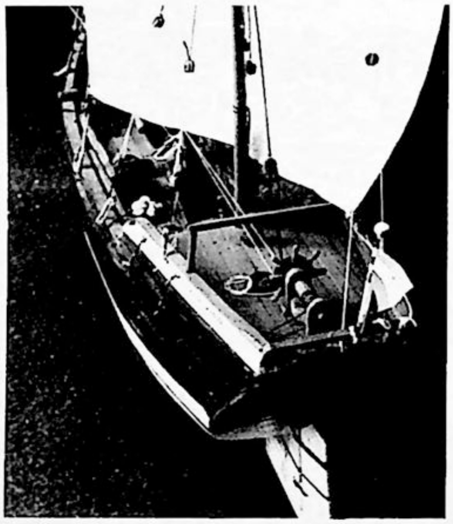
There was a deck house on the ship but it was a new addition and is not incorporated in the model.

Rigging

The hull is now finished and it must be rigged. A Kotia, with its dhow rig, cannot go about like a modern yacht but has to wear ship. The stern is turned into the wind, the windward stays are cast off and the foot of the spars are hauled in to the foot of the mast until the spars are vertical. The spars are then rolled round the mast to the other side and the new windward stays are connected and made tight.

The main mast is 49ft long, 1ft 6in diameter at the bottom and 8in diameter at the top. It is pointed at the bottom and has a slot cut through it at the top 2ft down. This slot is to take the main halyard and on the ship, it had two pulleys in it. The pulleys were not put in on the model. It is stepped at the forward end of the after hatch and raked well forward. The bottom point rests in a slot in a block mounted above the keel. Another spar 12in diameter and 16ft long, is erected on the forward side of the deck timber, forward of the hatch and this is lashed onto the mast at the bottom and just above the deck, holding the mast in position. The mast is also secured sideways with timber blocks between it and the side of the hatch.

The mizzen mast is 45ft long, 12in diameter at the bottom and 5in diameter at the top. It is also pointed at the bottom with a slot through the top. It is stepped behind the forward poop timber and passes through the main deck and rests on a block above the keel. It only rakes forward slightly.



The main spar is built up of four timbers. The top one is 37ft long, 3in diameter at the point and 5in diameter at the butt. The bottom one is 32ft long and the same thickness. These are butted end to end and spliced with a timber below, 45ft long, 5in diameter at the centre and 3in diameter at either end. The bottom end of this splice timber comes to within 5ft of the end of the bottom timber. The fourth timber is 7ft long and is spliced over the butt. They are all bound together with rope lashings as shown.

The mizzen mast is made of two timbers. The upper one is 43ft long and tapers from 4in to 3in diameter. The lower one is 50ft long and they are lapped and bound together for a length of 45ft.

The spars are suspended on double ropes which pass through the slots at the tops of the masts. The forward one is connected to its anchor post by an 8 part tackle, the mizzen by a 4 part tackle. The spars, at the point of suspension are packed with sacking, bound with canvas or leather to protect the ropes and to make it easy to roll the spars round the masts. The four stays, two on each side of each mast, are fixed at the top end on to a thick rope ring, so that when the stays are tightened, the spars are held down onto the mast.

The sails of the model are made in one piece but in the ship they are made up of a large number of narrow strips, the effect of this is achieved on the model by running lines of parallel stitching down the sails.

The rigging described is the basic rigging carried by all ships. Many of them have a third mast, stepped on the stern. When out at sea and clear of all obstructions, which might require them to tack, a variety of extra sails are set. Some of them put up topsails on a short yard on a short topmast hauled up on the halyard. Most of them put up one or two foresails. The foot of the sail is lashed to a boom and the peak hauled up the top of the mast with a temporarily rigged halyard. The boom is then pushed out and lashed to the horse and to the fairlead in the bow. Obviously all this has to be dismantled before the boat can tack and this involves sending a man up the mast. So the sails are only set if the ship is to be for some time in open water.

To make shieve blocks for the tackles, cut out a rod of eliptical cross section 10in x 8in and cut into 6in lengths. Cut a groove round the edge for the running ropes with a needle file and grooves down the sides round which the standing rope can be tied. To make fast the lower end of the tackle the following device is employed. A loop is spliced into the end of the standing rope attached to the lower block (glued in the model). A short rope is passed in through the gunwhale and anchored to the top of a rib in positions where the tackle is to be made fast. This should be about 2ft long. A wooden toggle is spliced into the end of this. To make fast the tackle the loop is passed over the toggle and the tackle adjusted. The running rope is then made fast to the same toggle as it would be to the cleat. In the model, the tackles were adjusted and then a spot of glue was put on all the blocks and toggles so that they will not get out of adjustment or come undone.

Painting

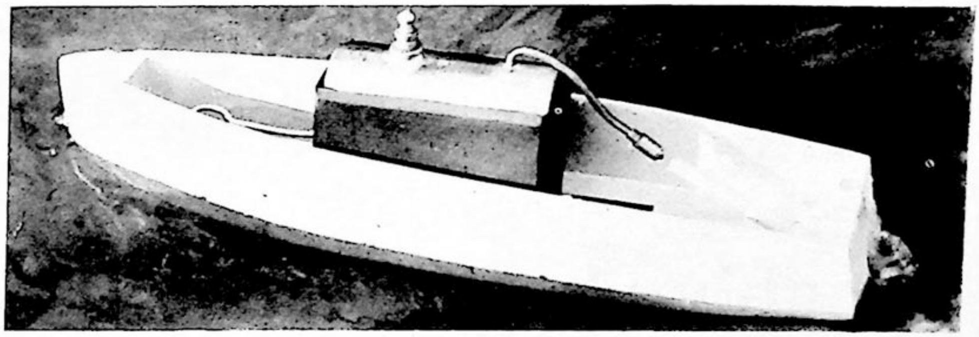
The outside of the poop gunwhale is painted white. Below this, as far as the first line, shown on the hull, the hull is unpainted. Below this is a 1ft 6in band of white, and then a 6in band of red. Below the bottom line the hull is white, the triangular part left in the bow has two tapering areas, the upper one green and the lower one black.

Traditional Steam Engines

By Basil Harley

No. 5

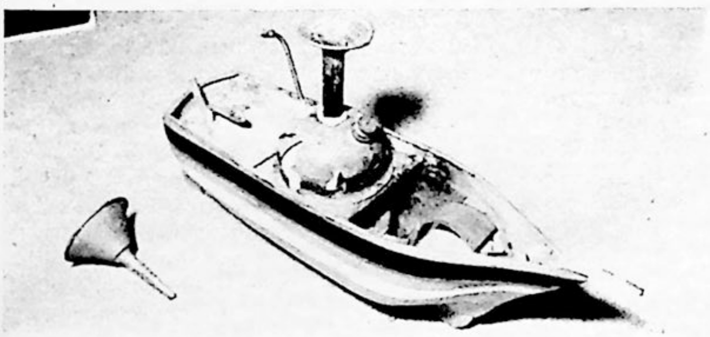
Victorian Jet Power



IN THESE days of hovercraft, computors and colour TV there can't be many of us who subscribe to the old adage about there being nothing new under the sun. Even so, I have found museums and libraries rich quarries for the sort of amusing technical novelties our forefathers invented and which have often been completely forgotten ever since. I was reminded of this the other day when Mr Edward Aubrook, the Curator of the Tolsen Memorial Museum in Huddersfield sent me these photos of his little jet propelled boat. Quite independently I had been looking in the Patent Registers some time previously and had turned up Mr J. B. Andreux' provisional patent of 1863 for a very similar jet boat. It's always exciting when one can match documentary research with actual hardware.

Mr Andreux' patent covered a toy boat with – "a tower having a moveable top to allow a small spirit lamp at the bottom to be lighted; immediately above the lamp is placed a boiler at the back of which is fixed a small and narrow pipe which corresponds with another in the interior of the boat and abuts at the rudder. The force exerted by the issuing steam on the water causes the boat to be propelled forward." This is not illustrated but would seem to be very like M. Salleron's French boat of about 1880 in which the steam jet is directed into another tube thereby entraining some air to be expelled at the stern.

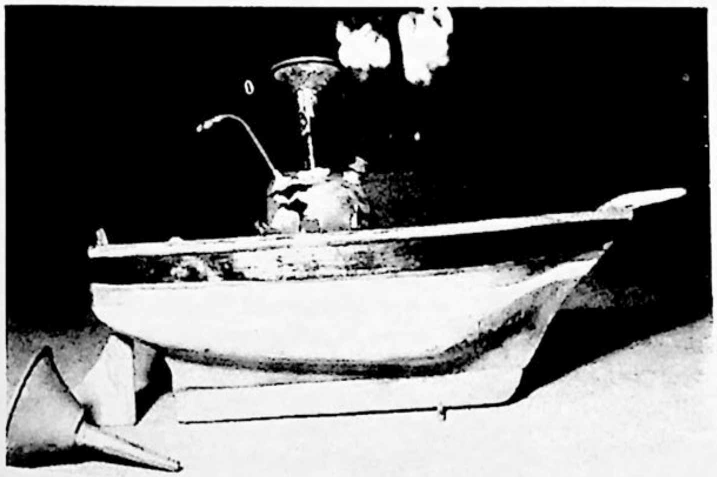
The boat in Mr Aubrook's museum is, however, a simple jet, propelled solely by reaction. I think it is quite early, probably from the last quarter of the 19th century and most likely it was made by J. Schoener in Germany. It is very pretty and has great charm though it will never steam again as the boiler has corroded. Since the pictures were taken the boiler has been rather better restored to its original appearance. Mr Aubrook writes, – "The boat overall is 9in long and the height of the funnel from the base is 5in. The colours are – lower hull red, then a white band, a blue band, a narrow red band, a black band and finally a narrow red band at deck level. The deck is yellow ochre. She reminds me of the fishing boats seen in Mediterranean fishing villages."



Above and below, *the author's experiments with jet power.* Left, *the early steam jet boat in Huddersfield Museum.*

As you can see, the spirit lamp slips under the deck and the flames go up a ¼in fire tube which runs through the boiler. Though I don't think there is much future in making such primitive jet engines today I have been doing some simple experiments to re-create one or two of these earlier toy patents to find out just how effective they were. For these I made a light wooden hull about 12in long and fitted a small copper boiler about 3in by 1¼in diam with a jet tube facing the stern. With a Mamod spirit lamp well alight she just made enough steam to look impressive and move the boat fast enough to demonstrate Newton's third law of motion but certainly not fast enough to be remotely satisfactory.

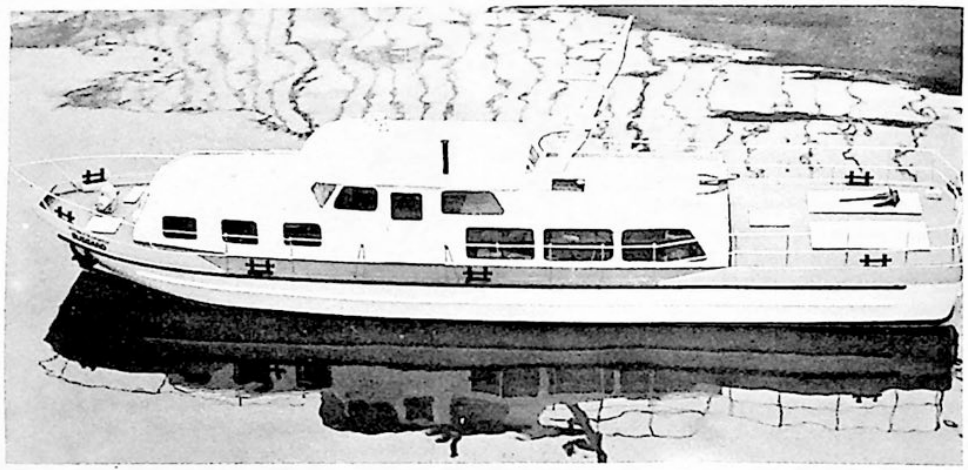
I then fitted an induction tube and directed the steam jet down this as in the Andreux and Salleron boats. This carried a fair amount of air as well which is discharged below the waterline at the stern with some commotion. This time a better speed was achieved but once again not really fast enough to be regarded as a satisfactory or practical form of propulsion. Pop-pops, or pulsejets, are a very much better proposition!



robbe BUSSARD

river patrol boat

reviewed by Chris Pinchbeck



THE *Bussard* is a river patrol boat based upon Mulheim and working within the network of canals and waterways in the Ruhr valley. With its shallow draught and narrow beam, it is ideally suited for this work and the twin rudder and engine installation ensure excellent manoeuvrability.

The main function of this vessel is one of environmental protection, checking water levels and flow rates and ensuring that all signs and notices are properly maintained. Working in conjunction with the river protection police, the *Bussard* also helps supervise the commercial and sporting activities on the waterways.

Kit & Fittings

Upon opening the well-made box with its attractive illustration, one is immediately impressed with the quality of the A.B.S. hull and superstructure vacuum mouldings. The sheet used is probably of a slightly thicker gauge than normal, imparting a high degree of inherent rigidity to the finished model. Ample supplies of hardwood and wire in various sizes and lengths are supplied, together with die cut sheets of plywood and A.B.S., providing deck head beams, cabin roof, doors and other components for completing the model. Blue tinted PVC sheet is supplied for cabin windows and vacuum formed sheet for other fittings. The clearly printed plan unfolds to give a three-view drawing of the model and details most of the fittings. This, together with the stage photographs, were quite sufficient to build the model. Very full instructions are supplied, but in the review kit, these were printed in German. An English translation will be available shortly.

The fittings are quite excellent, with turned metal winch drums and lights, moulded bollards and life-belts, chain, handrail line, transfers, rudders, propellers with shafts and couplings, and various links. The final touch is the provision of six wired miniature bulbs for steaming lights (two of which are pre-coloured red and green), plus a working searchlight.

Hull

The first job is to trim the flash from the hull. This can be done with a hot knife or hacksaw blade, finishing to the moulded line with a fine grade of glass paper.

The motors should now be fitted to their mounting plate and holes drilled in the hull to take the propeller shafts. By using a rigid connector, such as a brass tube, the motors and shafts may be installed as one unit, thereby ensuring correct alignment. Epoxy resin is used for this.

Holes are now drilled in the hull for rudder tubes, and the tube support beam prepared, this must be dry fitted first to check alignment of the twin rudders before epoxying the complete unit in position. Rubber grommets are supplied to provide a waterproof seal where the rubber tubes pierce the hull, but I was not entirely happy with this arrangement and therefore used epoxy resin.

The mounting blocks for the radio and battery trays were fitted at this stage.

The deck support blocks, deck beams and inwales are now fitted using an A.B.S. solvent cement. The forward deck beam is fitted to the underside of the foredeck and this assembly then glued into position. The aft deck is now fitted and any gaps between hull and either of the decks may be filled, using Plastic Padding, which should then be rubbed down to give a smooth, flush fit in the main deck area. Final preparation of the decks is completed by fitting the coaming around the main access hatch.

Last of all, the A.B.S. spray and rubbing strips should be fitted to the hull, using A.B.S. solvent adhesive.

Superstructure

Trim the bottom edge with a sharp knife to ensure a close fit following the sheer and camber of the main deck. Next, cut out the window and roof, using a Stanley knife. Heat the blade to almost cherry-red heat, then carefully follow the moulded guide lines. With a little practice, clean, swarf-free apertures can be cut. The internal wooden frames are fitted, followed by the roof and doors. Windows are best fitted after painting.

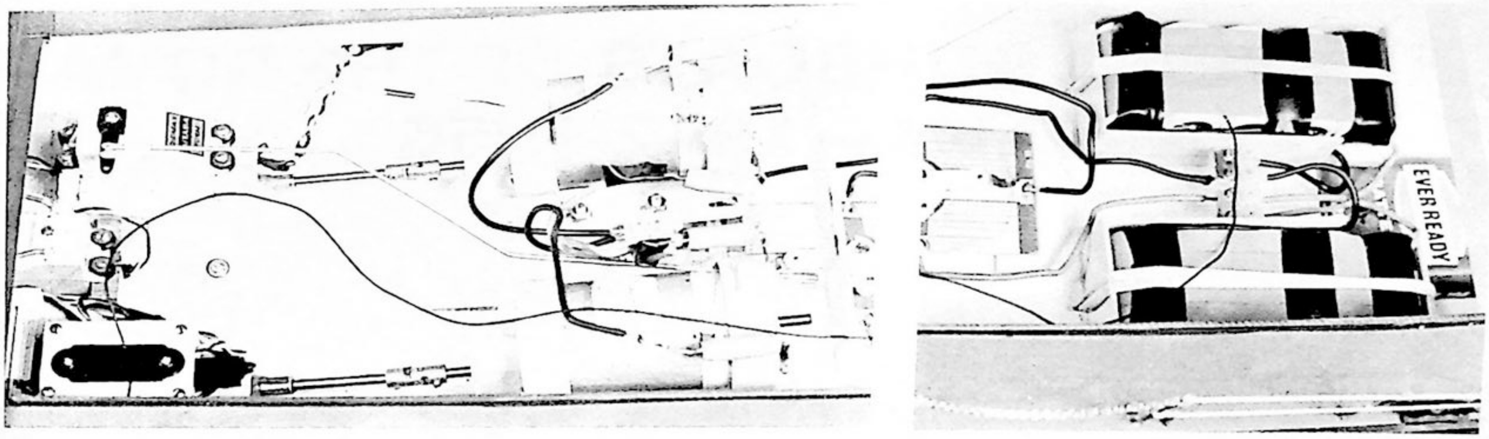
Fittings

The whole character of the *Bussard* can be made or marred at this stage.

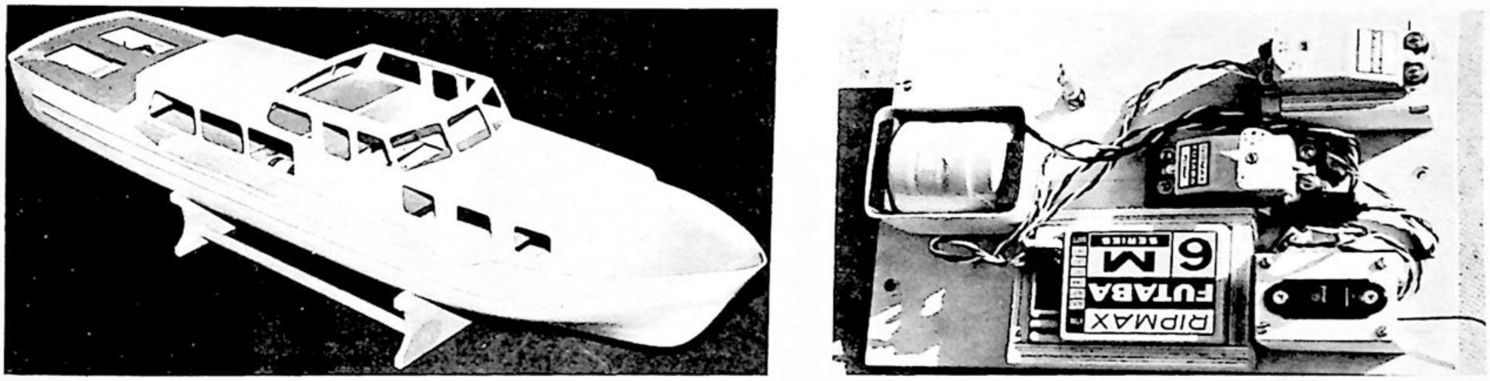
Mushroom vents and smoke stack are made up from dowel and the A.B.S. formed tops provided. The towing hook and plate are fabricated from A.B.S. and brass parts and can be made moveable. The deck hatches and locker on the superstructure are from ply and balsa wood. Those on the foredeck are simply glued into position, whilst the hatches on the aft deck are fabricated to blend with the camber of the deck and are removable to provide additional access to the radio compartment.

I fabricated the mast from four pieces of sheet balsa in order that the wiring from the steaming lights could be hidden inside. The supports for the lights are cut out from the sheet of A.B.S. parts provided in the kit. Before fitting the final section of the mast, all wires were connected and led out through the foot of the mast.

Winches are made up from balsa block, wire and the turned parts provided. Horn and working searchlight are simply bolted to the cabin roof and wired into the system. Port and starboard lights were fitted to their back boards, glued into position



The Bussard provides plenty of room for radio installation as can be seen from the reviewer's neat arrangement. Receiver, batteries, switch and servos are mounted on a wood panel to allow for easy removal and use in other models. The **Bob's Models** *resistance board speed controller can be seen above, between motors and main batteries.* Below left, *basic structure assembled with all windows cut out of the A.B.S. top.*



and wiring led through the aft cabin roof before connecting to the system.

Having drilled the decks at the indicated positions, cabin and bow handrails are formed from wire provided, soldered and fitted into position. Cyanoacrylate 10-second glue was used throughout the hand and guard-rail assembly. The stanchions were cut to length and a simple jig made up which ensured that individual stanchions were all positioned at the same height and angle. They were then glued into place and finished by attaching the upper and lower hand lines. A word of caution, in that the thread provided is only just long enough.

The hull was drilled at the position of the hawse holes and a short length of tube glued in position between the hull and the underside of the deck to provide a waterproof seal. The anchors were then epoxied into position with the stock fitting in the tube.

As a final touch, walkways on the deck were covered with 600 grade wet and dry paper to simulate non-slip surfaces.

Finishing

All plain wood should be given a coat of cellulose dope, followed by at least two coats of sanding sealer, rubbing down between each coat.

Humbrol enamel was used throughout and the box-top colour scheme followed. For convenience, it is often better to paint certain items before fixing into position. Painting sequence is therefore a question of individual choice.

The final job is to cut and fit the blue tinted cabin windows.

Motor Wiring and Radio Installation

Two geared Decaperm motors were used with a common speed controller. one of the Bobs Models Variospeed units was used and has proved entirely satisfactory. Two separate battery packs, each consisting of five 1.2 volt fast recharge nickel cadmium cells were wired in parallel. Since I use these same cells in another boat, connection to the wiring circuit was made through normal household-type terminal blocks.

The searchlight, navigation and steaming lights and cabin interior light, were wired in three separate parallel groups through a switch to a 4.5 volt dry cell battery. The switch was arranged to switch on and off when full left or right rudder plus trim was selected.

There is ample room on the radio tray to fit the required receiver, battery, switch and two servos. Double sided tape may be used, but since my Futaba gear is used in a number of models, I elected to use balsa and ply mounts, retaining the servos with small woodscrews. The aerial is led through the cabin roof just behind the foot of the mast and unobtrusively fixed to the mast with a small piece of tape.

Operating

Trim against waterline was checked in that ubiquitous testing tank – the bath! With all systems checked and operating correctly, we ventured forth to the local water.

Transmitter and receiver on, all systems checked, lower into the water and having selected slow ahead, away she goes. Conditions were not ideal, with a strong wind producing quite a 'chop'. The *Bussard* coped well with the water conditions, but with a comparatively high windage to wetted surface ratio, was not too responsive to steering. Rudders have subsequently been adjusted to give the maximum optimum throw of 30° each way.

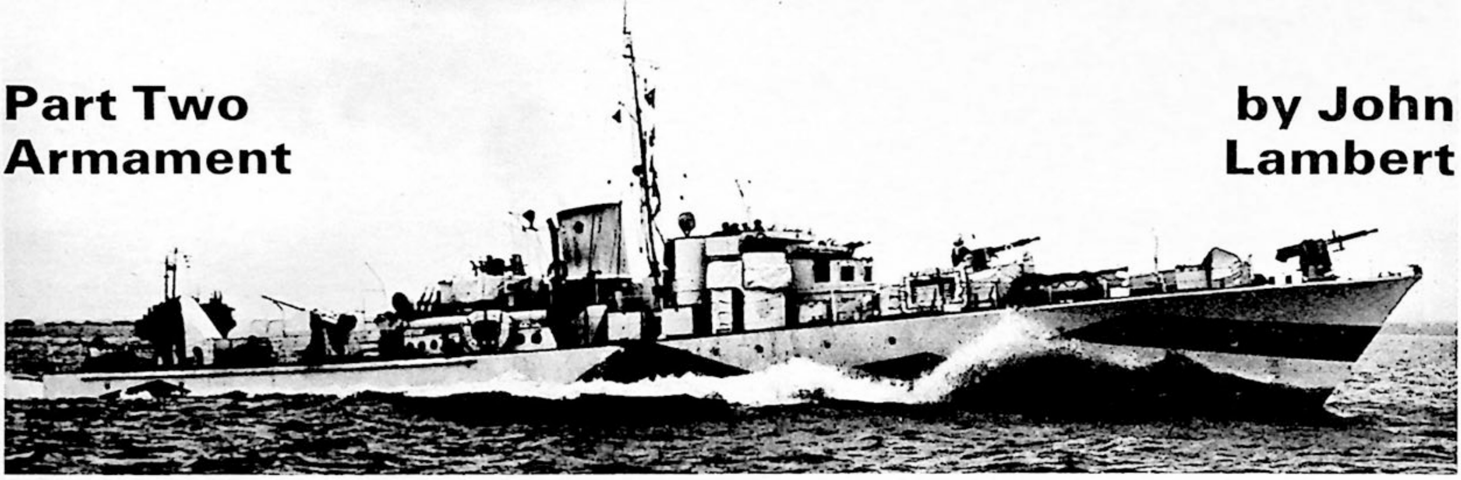
Motor control was excellent and "docking" precise. An interesting experiment would be the use of a mixer to give coupled rudder and motor control for delicate manoeuvring.

On the water, this scale model really looks the part, and congratulations must go to Robbe for providing a very complete kit which is easily assembled and finished to produce a very attractive model.
Kit Price £23.71 ex. VAT.
Fittings Price £7.36 ex. VAT.
Distributors: Eurapex Ltd.

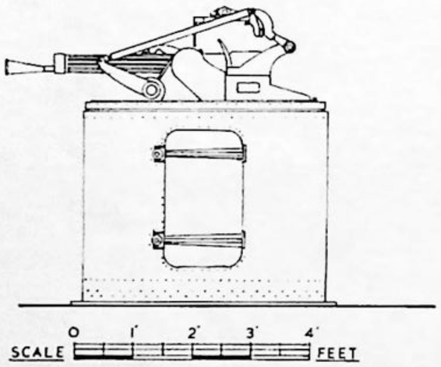
THE STEAM GUNBOATS OF THE ROYAL NAVY – 1942-1956

Part Two Armament

by John Lambert



Above, *SGB 304,* Grey Fox, *after her 1943 refit, showing the Mark VIII pom pom forward in the eyes, the Mark XV 2 pdr next. More splinter padding is provided and a 20 mm Oerlikon replaces the Holman Projector.* Opposite page, *304 viewed shortly after completion with armament covered with canvas screens. Her slim lines show up well in this shot. (M.O. Defence photos).*



·5 INCH VICKERS GUN ON TWIN MARK V POWER MOUNTING

31/12/78

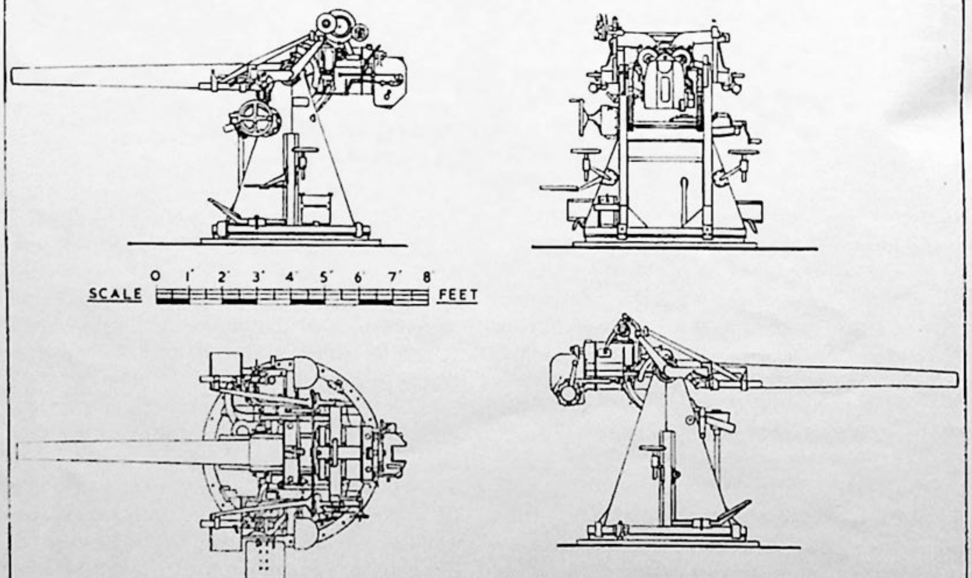
I HAVE been undertaking research on naval armament for a number of years, and have recently completed a book for the 'Ensign' series covering some fourteen differing weapons of the war period.

Owing to the amount of time required to complete detailed drawings, not all weapons are completed, but I have been able to complete the main details of the armament of our steam gun boats. Where I have already completed fully detailed drawings, I have included the serial number where they are available from the David MacGregor Plans Service.

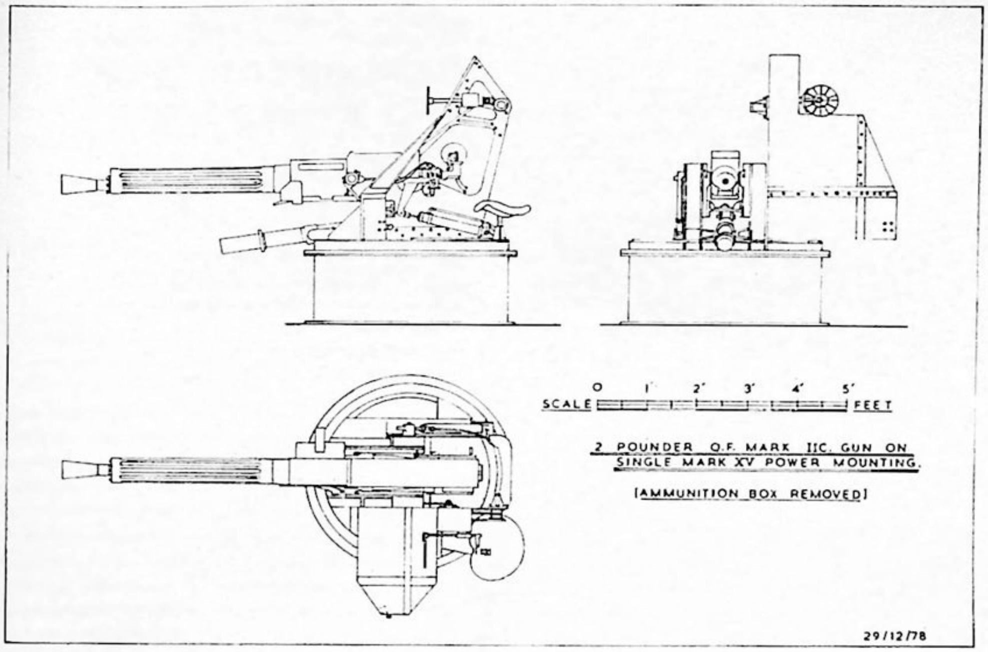
I have included ten weapon drawings, and additional photographs of our subjects. A brief outline of the type and performance of individual weapons mounted is included which I trust will be of use to those readers interested in War Gaming.

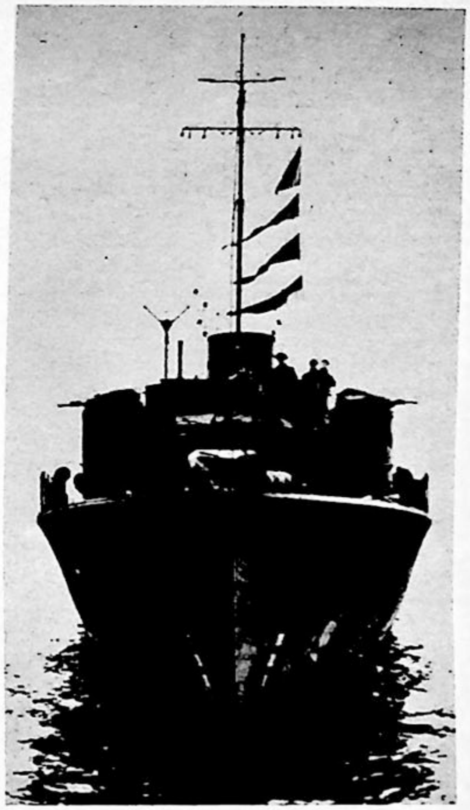
(1) The main armament that equipped all the class was two 21in dia. torpedoes, each being 24ft long and containing a 500lb warhead. When fired by the small 15oz cordite charge from the impulse chamber at the tube's rear end, the torpedo left the tube, entered the water, propelled by its air-driven engine and contra-rotating propellers (its depth was preset), and it ran for almost 10,000 yards at a speed of about 40 knots. No reloads were carried, and once fired the tubes remained empty, until reloaded at the home base.

(2) The twin .5in Vickers machine gun on the Mark V power mounting, equipped all these units, and was mounted each side of the bridge, being carried in power operated gun turrets or tubs. The guns had a maximum effective range of 1,000 yards and a rate of fire of some 700 rounds



3 INCH MARK III H/A GUN ON MARK IV MOUNTING. (GUN SHIELD REMOVED)


O 1' 2' 3' 4' 5'
SCALE FEET
2 POUNDER Q.F. MARK IIC. GUN ON SINGLE MARK XV POWER MOUNTING.
(AMMUNITION BOX REMOVED)
29/12/78



per minute for each gun. The gun had been developed during the Great War, was water cooled, and the ammunition boxes in the turret had a belt capacity of 650 rounds per gun.

The mounting was an effective close range dual purpose one, which could be used against aircraft or soft surface targets such as small unarmoured ships. (It is of interest to note that the bridges of German 'E' boats had been armoured to withstand .5in gunfire from early in the war.) The turret's power was supplied by a hydraulic variable delivery pump situated away from the mounting, in the engine room, which supplied pressure to the operating rams at 300 psi.

The mounting's maximum elevation was −10° to 70°, and it required only one man to operate, the gunlayer, who directed and fired the guns. Other crew members replenished the ammunition belts when they were expended.

The twin .5in machine gun was a popular reliable weapon commonly found aboard our coastal units, until the more potent 20mm Oerlikon gun became available. The Mark V powered mounting continued in service throughout the war, gaining a new lease of life when it was fitted to the bridge wings of a number of Fleet destroyers, owing to the shortage of 20mm and 40mm guns, for service with the Far East Fleet in 1945. The .5in ammunition lacked a great stopping power but the firepower was very effective at close range. (Drawing L/O/15.)

(3) The 2 Pounder Q.F. Mark IIC gun on the single Mark XV power mounting, with its high rate of automatic fire, was common to all the SGB's on completion. It came into service in early 1943, and was capable of 200 rounds per minute. Similar in appearance to the Mark VIII 2 Pdr gun, the Mark IIC had a lower muzzle velocity (2,000 ft/sec compared to 2,400 ft/sec of the Mark VIII gun), as the energy was utilised to improve the rate of fire. The gun barrel was water cooled (24 pints) and fired a 2 pound 1.575in (40mm) calibre shell to a max range of 7,830 yds.

Only one crew member manned the mounting, which again was power operated by the variable delivery pump off the mounting, although a hand pump was available on the mounting should there be a power loss. High explosive nose-fuzed incendiary ammunition was supplied in 14 round belts from the ammunition tray which held three linked belts giving a total of 42 rounds. Many of the rounds carried tracer to show the line of flight, which proved very useful for correcting aim in the darkness. A dual purpose mounting, equally effective in high or low angle fighting, it could engage aircraft up to 12,000ft. (Max height of a projectile at max elevation was 14,515ft approx.) Elevation was from −10° to 70° at 25° per second, and training was 40° per second.

A splinter shield was fitted to the left hand platform which afforded protection to the gun layer and the controls (Universal control valve box). The method of control to all the R.N.s power operated mountings was similar. The gunlayer manipulated the turret by various movements of his control handles, which were linked to balanced pistons in the universal control box; the gun and mounting being trained to the right or left by turning the handles in azimuth, with the handles being twisted away or towards the gunlayer for the gun's elevation or depression. The gun was fired by pressing the trigger on the right hand control, which admitted oil pressure to the piston, firing the gun. (Drawing L/O/10.)

(4) The heaviest gun mounted by our SGB's was the 3in Mark III gun with a muzzle velocity of 2,575 ft/sec on the H/A Mark IV Mounting, which dated from the first world war period. It survived into the second world war because of the numbers available and its good rate of fire (20–25 rpm). It was authorised for all boats of the class but was not available to some by their completion date. Suitable for dual purpose gunnery, it was of limited use against fast, low flying aircraft, being without any fire control system or predictor, as it lacked power control for training and elevation for fast tracking of targets. The mounting was constructed to allow the gun to be loaded or fired at any angle from 90° elevation to 10° depression.

The gun mounting comprised of the following major items: gun carriage, cradle with recoil cylinder and run out spring cylinders, base ring, roller ring, and elevating, training and firing gear. The mounting was also provided with adjustable seat and foot rests on each side for the gunlayer and trainer.

When designed, its target had been slowly moving aircraft and airships, but ashore it still continued in full use against enemy bombers until superseded by the more efficient 3.7in anti-aircraft gun.

Aboard the 'boats' it required a crew of five, having an effective range of some 12,500 yds, a ceiling of 23,600ft. It was effective against small surface targets such as 'E' and 'S' boats or armed trawlers. (Drawing L/O/17.) *(to be continued)*

Propwash

Model Power Boat Association News and Views from

Jim King

Ted Potter of Liverpool club supplied this shot of Bill Hayes' Kerne *steam tug, a model of the last remaining steam tug on Merseyside, owned by a consortium of enthusiasts, and usually moored in Birkenhead Docks.*

ONE of the disturbing factors in present life is the encroachment on the 27mhz radio control band by the so called Citizens Band outfits. Their operation is illegal in this country but they can be purchased quite openly in a number of shops. One could argue that the fact that they are sold under the term of "non licensable" is misleading, as to the average person this would indicate that a licence is not needed for their use, whereas the authorities, as we well know, mean that they are outlawed and a license will not be issued for their use. Interference from these sets has been reported from many different parts of the country and there are strong commercial pressures to make their use legal. If the Government of the day gives way to the advocates of those who would like to see the legalisation of a Citizens' Band, using the RC 27mhz band of course, then the band would be so crowded and out of control by the users that for our purpose we might as well forget it. For all practical purposes it would be a dead duck.

With this in mind the SMAE (Model Aircraft Association) have submitted a memorandum to the Home Office, who are to take part in a conference on the allocation and changes in usage of radio frequencies later this year, and the MPBA Executive have decided that they will give full support to the SMAE in this matter, and if necessary will make a separate approach if both bodies think it will be of use. At the beginning of the boating season, this conference, which takes place later in the year, may seem in the distant future, but just allowing for the time to make any changes that do come about, it is looming on the horizon and there is no time like the present to take heed of possibilities. The model trade association are also involved and are in agreement with the SMAE, so it was felt that we should support those who are looking after model interests, and if we can present an united front so much the better. If this sounds like politics, well that's too bad because unfortunately it is just that, and is the one case at the present time where we need to get involved as modellers in that un-savoury game.

As a side issue and maybe nothing to do directly with the model point of view, perhaps someone in the USA or maybe the BDR (West Germany) can let our readers have a short report on what they think of the CB system and the effect on model activities in their country. For anyone outside the USA (I cannot speak from experience about conditions in the BDR) it is not possible to gain any idea of what happens on the Citizens Band and the confusion that reigns on the speech channels. Sets can be purchased over the counter in most of the bigger supermarket chains and how anyone can use them with any satisfaction, particularly in the big towns, beats me, for to listen in on the CB produces a reaction that could only be obtained by having all the British Rail PA Systems going at the same time. To talk of the Tower of Babel is hardly descriptive of what goes on, but on the one occasion when I really got a taste of it was in a Springfield, Virginia store (J. C. Penneys to be precise) when an optimistic salesman tried to sell me a set while we were waiting for some tyres to be changed. I know that of late, radio and public address transmissions come hard for me to understand, but the racket that was going over the air that night was nobody's business, everybody seemed to be talking at once. I did listen on another occasion while on the interstate highway, and the only use that seemed to be made of the system was for the truckers to inform one another of the whereabouts of the 'cops'. No, if we can keep bands reserved for our own use, even if it means a frequency change, all well and good, and if there are none left for the Citizens Band then I feel the model fraternity will have done the rest of the community a good turn. Perhaps if you think of it and take the American way as an example, the only reason that most will buy a CB set is to keep up with the Jones's; apologies to all my friends named Jones.

Final word on that subject for the time being is to say that it might be necessary to bring pressure to bear on your MP, and when, and if, that time comes, make sure that you let them have your point of view. Matter of fact, some people are already writing to their MP's on the subject and this may not be a bad idea. A letter from each of the 50,000 license holders would surely register somewhere. And another thing, if you have not already got a license, now is the time to add to that number. The address to write to is:

The Home Office
Radio Regulatory Dept.
Waterloo Bridge House
Waterloo Road
London SE1

and since it will only cost you £2.80 for five years you are not likely to be forced into the bankruptcy court.

* * *

A recent note in this column that the Manchester club had lost their regular water brought El Presidente, Frank Bradbury, on to the phone to say that they now have another situated in Debdale Park, which is located on the Eastern side of Manchester. Arising out of a clash of dates, the one thing that organisers of indoor events dread is double booking of a hall, but now it has occurred with a lake. Thorpe Water Park has got itself saddled with an international ski event and the main water stadium is not available on 16th & 17th June, so the events scheduled for that and the following weekend at Thorpe have had to be rearranged. The National Finals for Speed and Steering, radio control, will both be on Manchester's new water mentioned above, on 17th June. Records weekend will remain at Thorpe on 23rd/24th June, with Naviga records on Saturday and 110 and 440 yard events on Sunday. Entries for Thorpe from Geoff Heward, as per previously published regatta list. It is unfortunate that this has happened but it is always one of the hazards of any organisation and like this occasion, usually is caused by some outside factor leaving nothing very much that can be done except to arrange a change of venue. When this sort of thing happens a lot of work has to be done behind the scenes and unless you are directly involved the work is not appreciated. On this occasion quite a few people became involved, primarily because of the need to coordinate efforts at Thorpe and to resolve the date clash, and in the ultimate, Messrs Heward, Sidebottom, Harvey, Croydon and Cundell put in a lot of mileage to resolve the problem. In the end they all wound up in a tired state in your correspondent's front room in Redbourn, and I feel that a vote of thanks for their efforts will not come amiss.

* * *

Keeping with the Manchester area for a time, as many know, we have obtained sponsorship for the supply of team uniforms for the Naviga Championships, and because of bulk ordering we are able to offer non-team members zip fastened jackets of the same pattern as the team, but with a different trim, for the sum of £6 each. Send orders to Frank Bradbury at 30 Greenpark Road, Manchester MR22 4DR by 15th June, as the bulk order has to be in by then, and any orders received after will be returned. Still with the President, his many friends will like to know that by the time you read these notes he will be once again in the Royal Freemasons Hospital in West London for yet another operation, and I am sure that you will join with me in wishing him well and a quick and successful recovery.

* * *

The paper work attendant on the MPBA becoming a limited company seems to be proceeding with reasonable speed, and considering the amount of work involved things are going better than could be anticipated. A phone call from John Benson that he had to date signed over a thousand certificates, this plus the fact that the holders' names and addresses had to be written in as well is a slight indication of the work involved. Fortunately it should be a once only exercise that the three area treasurers will be glad to see the back of, perhaps we can find some cash to buy them new pens, for after a collective signing etc, of three thousand plus certificates and membership cards, I am sure that they will need them. If queries do arise in connection with this effort do please bear with the treasurers in their efforts, for after all it is a voluntary job and some patience in getting queries sorted out is called for.

* * *

A newspaper cutting from America calls my attention to the fact that I did promise the Mariners' Museum that I would remind my readers at this time about the International Model Ship Craftsman Competition to be held at the Museum in 1980. Four categories of models are catered for: 1, kit models; 2, modified kit models; 3, modified scratch built models; 4, scratch built models, with Junior and Senior classes in each category. Models have to be at the museum by 1st June 1980. Details and entry forms from Model Ship Craftsman Competition, The Mariners' Museum, Newport News, Virginia, 23606, United States of America. I hope that some models from Europe will make their appearance for I am sure that it would surprise our friends on the other side of the big ditch just what quality is built into the efforts of members of the scale model fraternity here. I know that there could be a problem in taking models over but as long as they are not big ones they can go out as accompanied baggage, and at least one air line, Laker, was more than sympathetic to the problem when the Canadian team came over for the Endurance effort and nothing succeeds so well as trying. One problem will be the return of the models for winning ones will be on show until September, but again air freight will be available and who knows, there might be a sponsor to ship them back.

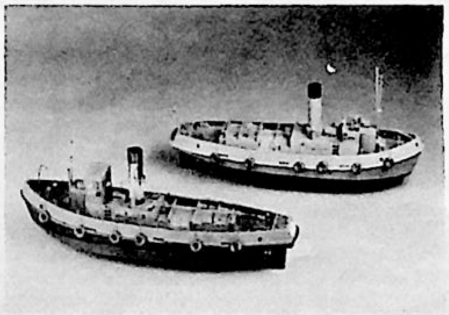
If anyone does decide to go and make a holiday of it as well at Virginia Beach, the sun lover can have as much of that commodity as he likes during the summer, in fact there is more than enough and the sand burns bare feet. In addition to the Museum there are the shipyards at Newport News and the Naval base at Norfolk to provide interest for the ship modeller. Better leave off now or I will be talking myself into a trip over at that time and I don't think that funds will stand it, but it's a nice thought all the same.

* * *

June sees a lot of activity on the water and it is worth noting for those on the North-east coast, that the ever popular Tyneside event will be held on the 9th at Paddy Freemans, Heaton and Tynemouth Lake on the 10th. It is some time since I got up to the N.E. but from reports in recent years this classic event has lost none of its appeal over the years. On June 3rd the RC Speed eliminators will be held and no doubt some fast times will be recorded, straight speed over the Naviga triangle has lost a little of its initial appeal but in some quarters it is coming back into its own. Perhaps the cost of damage in multi-racing gives food for thought. For those who don't mind a little travel I notice that Inverness are promoting the 'Highland Open 100' on 17th June, a two hour multi-endurance race for a first prize of £100, and this seems to be a suitable occasion for the Sassenachs to go raiding over the border with an eye on this booty. On into July and on the 1st is probably the oldest event in the model power boat calendar, The Grand Regatta, to be held at Victoria Park, Hackney. Essentially a day out for the straight-runners and devotees of the tethered hydroplane, the Grand always has a regular following and it will be a pleasant surprise to followers of the other facets of our hobby if they took time out to go along and see how the two oldest sections enjoy themselves with the minimum of fuss and bother. On the same day the RC National Endurance Championships are being held at Wyken Slough in Coventry so that both the oldest and the latest in boating fashions have big days simultaneously but many miles apart.

With the editor out of the way in Toledo, Ohio (Lucky So & So), and not in a position to push for more material before press day I am going to take the opportunity to cut this short and get into the workshop for some model engineering. Until next month, here's to good boating weather.

Jim King



New Quick Build Tid Tug Kit size 20½" x 5¾" x 7½" Including Electric Motor ● Mount ● Prop Shaft ● Support ● Vac Formed Hull ● Servo Trays ● Stand ● Tyres ● Fittings ● Printed Plastic Sheet Superstructure ● Knife ● Liquid Cement ● Full Size Plans. Can be built and sailed in 40 hours. **£16.50+65p** p&p.

Kits and Plastic Hulls
'575' Ocean Racing Yacht
£15.50+65p p&p
Airboat for all seasons
£17.95+65p p&p

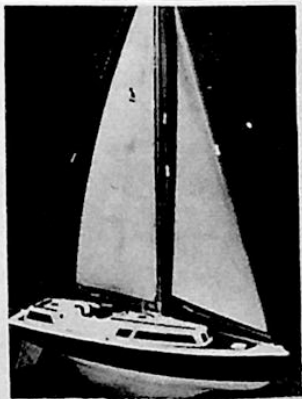
Hulls to Vic Smeed Drawings
'Akron' 25½in **£5.49+65p** p&p
'Tid Tug' 20in **£5.15+65p** p&p
C. Puffer 17½in **£4.95+65p** p&p
Including Plans and Stand.

Stand off scale hulls
Trawler 30½in, Cargo 29in, WWII Destroyer 30½in, Leander 31in, Ocean Going Tug 32in, Thames Sailing Barge 32in+Leaboards & Rudder.
£3.00+65p p&p

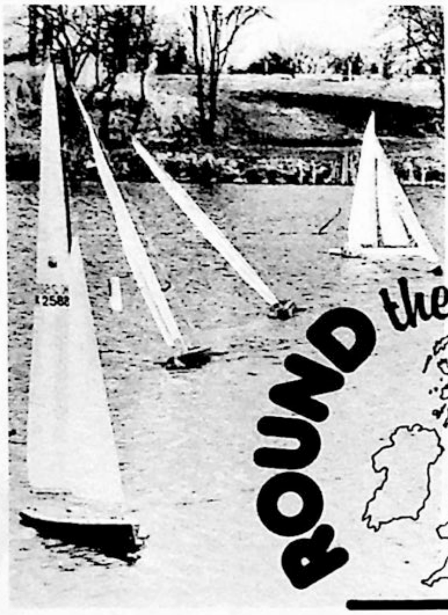
575 Regattas
Coventry, 3rd June
Stoke Park, Guildford, 8th July
Setley Lake, New Forest, August
SAE for details.

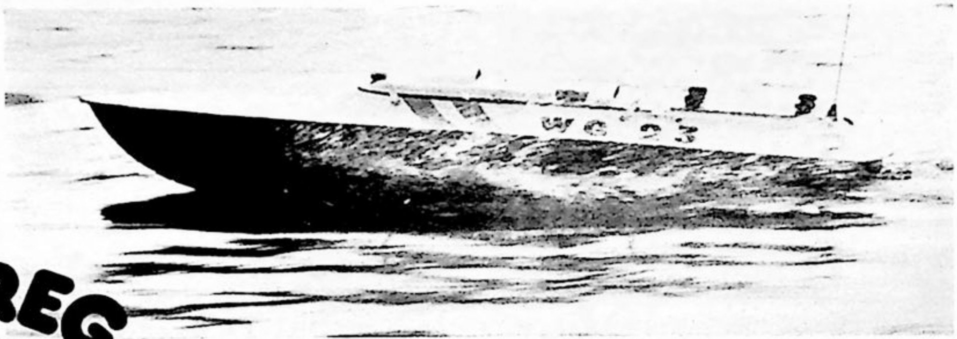
37in Oakley L/B Scale Hull
£11.95+65p p&p

DUPLEX CRAFT CO.
86 Constance Road, Leicester
0533-738921, 884172, 771174
SAE for details



The 575 is designed for manual or 1 or 2 channel radio. MYA class.





Left, *the first boat home in one of the heats at the Andover Sail-In has crossed the line, followed closely by two more and the final pair rounding the last mark. (Photo, C. Bowler).* Above, *Cliff Lucas's winning 'B' class* Jaguar/*Webra 40 boat at speed during Wigan Multi-Race meeting. (Photo, B. Aldous).*

ROUND the REGATTAS

Early Season Reports

Andover & District MBC 'Sail-In', 1st April, Foxcotte Lake

Twenty-five skippers from the Cheltenham, Danson, Decoy, Fairford, Woodley and home clubs turned up for Andover and District Model Boat Club's annual 'Sail-In' on Sunday 1st April.

The event was organised using a schedule discussed as long ago as the Southern District AGM, and recently mentioned in Logbook for RMs. A total of 36 races was completed in six hours with each skipper sailing nine races.

Recent gale force winds subsided leaving Sunday almost windless so that Andover members feared the day would again lack sufficient wind, as in previous years, to complete a full sailing schedule, but a good breeze built up by the start and provided excellent conditions.

The fleet was split into four groups and each group sailed three races straight off. The four groups were then re-arranged according to scores and the scores discarded. The third re-arrangement saw the top skippers in one group, two groups with the less lucky skippers, and a fourth group for whom it was not their day.

From the top group emerged the winners of the day to receive trophies.

1st	D. Townshend	Danson
2nd	T. Owens	Danson
3rd	P. Freeman	Danson
4th	G. Hoere	Decoy

As a consolation the winners of the remaining groups received Easter Eggs, and they were:

2nd group	T. Croxon	Woodley
3rd group	D. Owens	Danson
4th group	J. Hammond	Cheltenham

The 'Grand Loser' of the day, R. Barnet, of Andover received a clutch of small Easter Eggs.

Most skippers' comments appeared to be favourable regarding the new schedule. Racing was round a triangle with the middle mark missed out on the second lap. Three races straight off cut down the time lost in getting boats on and off the water during a normal schedule. The full results and notes on the system have been sent to the clubs who took part inviting comments. With all the mud around the lake due to landscaping being carried out, skippers this year had the use of a newly installed landing stage. Officer of the day was Mr D. Brown, and the prizes were presented by Mrs J. Swatton, wife of the Andover Club secretary.

D. Brown

Wigan MPBC Open Multi Racing Regatta, 18th March 1979

On a day when most of the country was covered in a blanket of snow, the first multi race meeting on the MPBA Northern Regatta list took place in good conditions at the Three Sisters Recreation Area near Wigan. A degree of sunshine in the afternoon added to the pleasantries of the day.

The day's events got underway with the first of three ten minute heats for unlimited electric boats. This attracted four competitors who's boats were easily identified by their individual colouring, reminiscent of tiddly winks from a Ludo set. First home after three heats was Dave Wooley who's 'fast electric' lapped its rivals with predictable consistency.

In the IC classes, a margin of superior performance was noticeable between the K & B 21 powered *Alphas* and the other 'A' class boats, although the two favourites from Wigan, Dave Marles and Kevin Blears collided and put themselves out of the race. The 'B' class results serve to remind us that the HP 40 power unit is still competitive, whilst in the 'C' class we are beginning to see the 65s creep into the results. Particular mention must be made of the very fast OPS 65 powered *Silak* entered by a Leeds competitor which must have been the fastest boat of the day although its engaging capacity to nose dive prevented its appearance in the results.

The lap score for A. C. Shaw's *Barracuda* does not reflect the speed at which this boat travelled, it was, without doubt, the fastest petrol powered boat yet seen at Wigan.

The local lad of the day was Cliff Lucas, who in addition to his 'B' & 'C' class trophies, retained the M. J. Skene Rosebowl for the highest lap score of the day by a Wigan MPBC member.

Our thanks goes to all competitors who in spite of very bad road conditions, made journeys from Barrow, Glasgow, North Birmingham, Leeds and Birkenhead to make the day a successful one.

RESULTS

Positions	*Name*	*Club*	*Boat*	*Engine*	*Laps*
Unlimited Electric					
1st	D. Wooley	Birkenhead	Nagari	–	59.1
2nd	I. Shaw	Birkenhead	Scorpion	–	51.4
3rd	B. Milner	Birkenhead	Scorpion	–	50.3
'A' Class					
1st	M. Allen	Birkenhead	Mini Jaguar	K & B 21	51
2nd	A. McHugh	Wigan	Mini Alpha	K & B 21	49
3rd	B. Warburton	Fiddlers Ferry	Alpha 20	K & B 21	48.4
'B' Class					
1st	C. Lucas	Wigan	Mk. II Jaguar	Webra 40 Pylon	50.1
2nd	A. C. Shaw	N. Birmingham	Opus	HP 40	57.1
3rd	J. Graham	Birkenhead	Cougar	HP 40	51.2
'C' Class					
1st	D. Jepson	Leeds	Cougar	OS 60 FSR	62.3
2nd	C. Lucas	Wigan	Cougar	Webra 61 F	60.5
3rd	T. K. Wigglesworth	Leeds	Puma	Rossi 65	60.3
'SI' Class					
1st	A. C. Shaw	N. Birmingham	Barracuda	O & R	31
2nd	J. H. Faux	Manchester	OD	J LO 35	29
3rd	S. Bertram	Barrow	Comet	Quadra 32	26.2

B. Aldous

Woodley MYC Open Meeting, 24th March 1979

A report from behind the front lines — well behind.

I'm too young to remember, of course, but I believe that Sir Winston Churchill (the man, not the sailing ship) was involved in the Boer War as a War Correspondent for *The Times*. I do remember *The Times*, just.

Being a War Correspondent then – as now, I suppose – was a somewhat hairy business; in theory, you were a non-combatant, carried no weapons, and avoided joining in the conflict. This is fine, of course, so long as the real idiots, those doing the shooting, realise your special situation and refrain from despatching you like one of your own reports.

I was reminded of this a few days before the Woodley Club's annual March Open Meeting, which has a fine tradition of thunder, lightning and rain for its occasion, regardless of the weather before or after the day. You see, after hopping like a wet flea around the edges of the last two Meetings, making helpful comments to the beginners, and seeking sage advice (no, not 'Get Stuffed') from my heroes, I had rashly stuck my hand in the air when entries from Woodley were invited; in other words, this year I would be a combatant.

Then – horror of horrors – in spite of my last two efforts at reporting, I was 'Volunteered' to have a go again this year; although the reasons given seemed to be divided between 'You might get it right this time' and 'No-one else wants to do it.' So here I was on Sunday, 24th March, 1979, at Southlake. I'd never raced against anyone outside the Woodley Club; my boat, a Chris Dicks rarity called *Galadriel*, was rigged for a fair blow, and fitted with a brand new rudder for the event (more of that later); and my trusty pad and pencil were to hand to note the trivia that make up my reports.

If I won, of course, it could be embarrassing – 'Modesty forbids' and all that. But a glance at the entries – John Cleave, with a new *Klug*, raced for the first time the previous day; Chris Dicks with his son, sailing identical new boats; Tim Fuller, scourge of South Africa's World Championship, and Vic Cooney, a previous winner, sailing a new *Trapper* – as I say, a cursory run down this formidable list reassured me on that score. I might, I thought, finish about 15th out of 22; and I would be satisfied with that. Satisfied? I'd be delighted.

The OOD was Ted Geary: the big avuncular sort of chap who inspires respect in those around him, by combining friendliness and sympathy for genuine mishaps with a stern no-nonsense attitude to the rules. He called the skippers (hey – that's me!) together for a talk at 10am sharp; and the first race began at 10.15.

By then the weather was showing only mild signs of what would happen later. Gusty breezes, carrying intermittent squalls of rain, nudged the solid grey clouds through the trees around the lake. At one time, the wind was literally blowing from two directions simultaneously, and boats on two separate legs were reaching on the same tack.

Meanwhile, I was trying to learn what to do for the best. I was not 'on' till Race 4; so I could watch the others and judge the best start tactics, courses between marks, and so on. I'd even had time for a bit of practice myself, and was pleased with *Galadriel's* fleetness of foot.

Race 4 was, shall we say, a shock. To quote Sir Winston, it was not the end, nor even the beginning of the end, but it was the end of the beginning. The wind was gaining strength, and by now was as strong as I had sailed this boat in during her twelve month's career. I got a fair start, and we all hared off towards the windward mark, sailing clockwise. Except that *Galadriel* had other ideas and began sailing anticlockwise, in small circles. Rudder linkage slipped? Yes. Please, Mr Geary, I'm out of control and wish to retire. Of course, I was in Race 5 as well; so I was out of that as well. The wind increased steadily and was gusting up to 26 mph by midday. A change of sails seemed indicated, and this was done – by a good many skippers, not just me – although it was noticeable that the *Trappers* from Danson, belonging to Messrs. Owens, Townshend, Freeman and Richards, stayed in working suits throughout, and stood up like puppies begging for biscuits. They also sailed straight and true, and very fast on all courses.

Perhaps the most drastic reduction in sail area was achieved by John Cleave. His *Klug Merlin*, beautiful to behold, was most unhappy in the conditions; and after a particularly heavy gust he was heard loudly shouting something like 'Scissors! Scissors! My Porsche for some scissors!' Shears in hand, he then trimmed his only sails by the simple process of cutting about a square foot off the top of the main, and a proportionate amount from the leach of the jib. It didn't help much.

By this time, *Galadriel* looked even worse, and even in storm rig could not handle the weather. Her best achievement was one lap of the course, completed at a good speed – by which I mean that after a poor start, she stayed the same distance behind all the way round – before the rudder failed again. My interest now became that of a correspondent, rather than competitor. How about some quotes, I thought. Let's ask Mark Oxlade: he's always got a lot to say. But Mark was downcast, as I was, although for different reasons. He did agree with me, though, that in these conditions the best skipper might well lose to the builder of the strongest boat. Chris Dicks was more talkative; but then, he was having a good day. The meeting was well organized, protests were few, and people were obeying the rules and doing 720° penalty turns without question. I had to agree with him there. Ted Geary ruled with an iron fist. Norman Curtis pointed out the low incidence of radio problems. This suggested well built boats (I shuddered slightly) which kept the water out in spite of continual submarine sailing, and a general improvement in reliability of the equipment. The only real radio failures were caused by skippers allowing boats to sail away with the radio switched off – Chris Dicks among them.

Last on my list was Vic Cooney. He once played Santa Claus at a Christmas Fayre I was running. Nice, helpful chap. He was about to start his last race. Let's have a quote when you've won this, Vic? I can't remember the exact nature of the disaster that occurred in that race. Suffice it to say that (a) Vic probably won't feel like playing Santa Claus for some time, and (b) he offered no quotable comment afterwards.

All in all, a most satisfactory day, if you sailed a *Trapper* and came from Danson. Others could congratulate themselves on just completing the day's sailing in one piece. And one at least will console himself by reflecting that even Sir Winston Churchill, great soldier and great writer that he was, never tried to do both at the same time.

Let the last words come from Ted Geary, as he gave away all those lovely prizes to Danson, Clapham, Guildford and The New Forest: "I'd like to thank you all, gentlemen, for making my job an easy one, with your good sailing manners – and good sailing – in extremely bad weather conditions!"

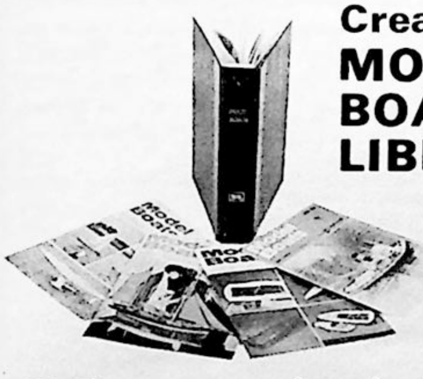
As he said it, the official tent blew away for the sixth time, but I felt a little glow inside. I *was* a skipper, for a little while, after all.

Many thanks to Norman Curtis and Margaret for their hospitality, and to Miss Cooney, for her work as official scorekeeper.

RESULTS

Skipper	*Club*	*Boat*	*Design*	*Points*	*Position*
Tony Owens	Danson	Ynot II	Trapper	75	2
Dave Townshend	Danson	Lady M	Trapper	68	3
Peter Freeman	Danson	Boots	Trapper	78	1
Brian Sheldrake	Woodley	Galadriel	Alska	0	21
Jack Richards	Danson	Side Winder	Trapper	53	7=
Dave Croxson	Guildford	Skua	Gaucho	45	11
John Curtis	Guildford	Frisky	Alska	53	7=
Norman Curtis	Guildford	Flash	Seahorse III	60	5
Chris Dicks	Clapham	Shadow	OD	61	4
Mark Dicks	Clapham	Red Shadow	OD	0	20
Mike Peppiatt	Clapham	Betagem	Aeolus (mod)	30	16=
Tim Brown	Andover	–	Dik Dik	20	19
Dave Brown	Andover	SAC	Challenger	22	18
Tim Fuller	New Forest	Blue Diamond	Seahorse Mk. III	57	6
Ray Belding	New Forest	Melody	Seahorse Mk. III	36	13=
Ted Croxson	Guildford	Sea Filly	Seahorse	49	9=
John Cleave	New Forest	Boadecia	Merlin	49	9=
Vic Cooney	Woodley	Lulu	Trapper III	30	16=
Gerry Thorne	Woodley	Mokelor	Moonraker	36	13=
Alan Oxlade	Woodley	Allegro	Gaucho	42	12
Mark Oxlade	Woodley	Ultrasonic	Seahorse II	32	15

Brian Sheldrake



Create your own MODEL BOATING LIBRARY

Bind your magazines in the EASIBINDER

Attractively bound in blue Balacron with the title blocked in gold on the spine, the Easibinder is designed to hold 12 copies of MODEL BOATS.

The Easibinder opens flat for easy reference and copies can be removed and replaced with ease.

Price: U.K.:– £2.95 inclusive Overseas:– £3.50 or $7.00 (Please allow 3–4 weeks for fulfilment of order.) When ordering please state year/s required.

EASIBIND LTD., 4 UXBRIDGE STREET, LONDON W8 7SZ
Tel: 01-727 0686

I enclose P.O./cheque value .... for .... binders
at........each for MODEL BOATS (BLOCK letters please)
For year/s ....
NAME ....
ADDRESS
.... DATE..................

CLEETHORPES MODEL BOAT BONANZA

TWO-DAY POWER EVENT
9-10 JUNE 1979

Multi-Racing+R/C Steering
+Speed Steering+Hydroplanes
+Team Events

★ ALL BOATS WELCOME ★
ON FRESH WATER

Entry forms from:

G. Griffin
13 Underby Drive,
Grimsby DN37 9ET

model boating with RADIO CONTROL

Part Three (continued) Planning the Installation

Drying Out

If the worst does happen and everything gets soaked, the first thing to do is disconnect the batteries. It is the electrolytic effect and short circuits which cause the most damage. Most of the solid state components used in radio gear will not be affected by a short dunking in fresh-water, but salt water is a different situation entirely. The best action to take in the latter case is to dunk receivers and servos in a bucket of fresh water or under a cold tap. Drastic action, but you must remove all traces of salt otherwise within a few days you will have a green rotting mass. After flushing, blow out as much water as possible and then borrow a hair-dryer for final drying out. A fan heater makes a reasonable alternative. There will still be a problem in that the small motors used in the servos are made to such tight tolerances that moisture will remain trapped inside. They cannot be taken apart without special equipment. However, don't despair, modern technology will help. No self-respecting modeller should be without a can of instant maintenance; examples are WD40 and AP75, obtainable at most motor accessory shops. These liquids penetrate, repel moisture, clean and lubricate, and a quick squirt will cure the motor problem. The stuff will also work miracles with dirty plugs, switches, telescopic aerials, linkages, etc.

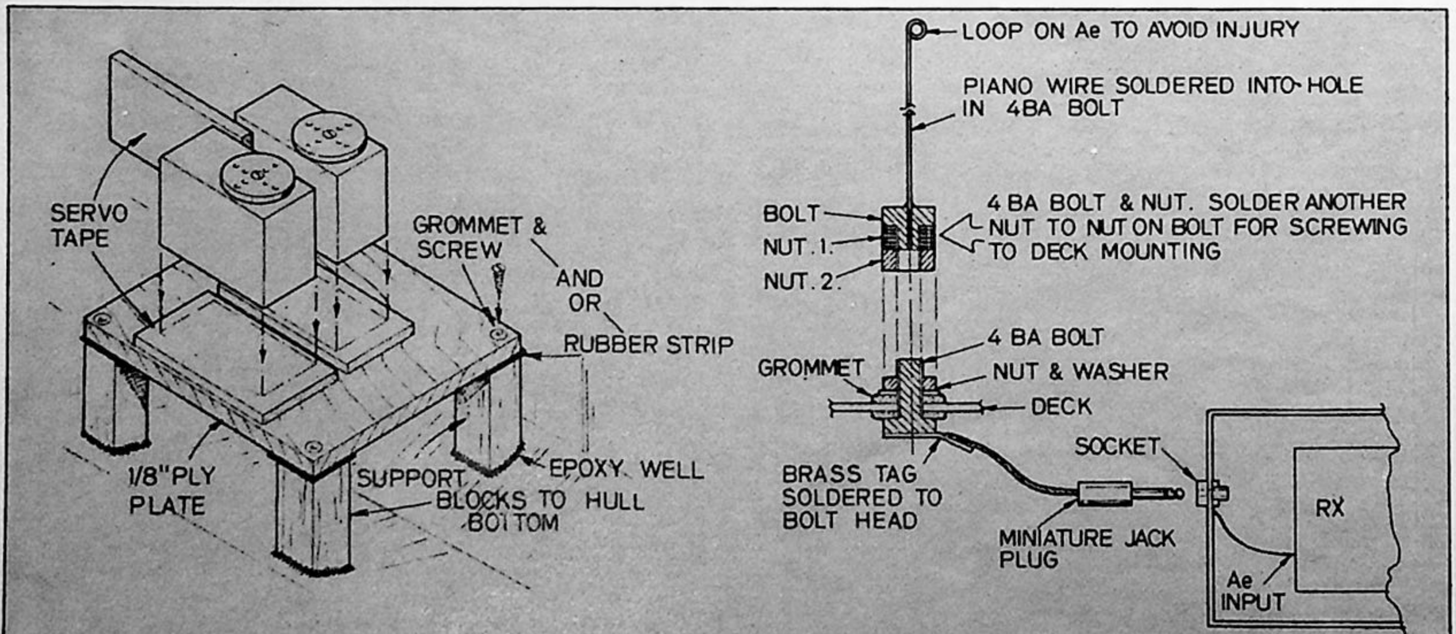
Switch access

The switch between battery and receiver is often the weak link in a waterproofing system utilising the plastic container, but is an essential item when quick access to the receiver/battery plug and socket is denied. Two methods have found favour over the years. The switch can be operated by a wire push rod which passes through a close-fitting grease filled bush mounted in the side of the radio box. Alternatively, large rubber blind plugs can be obtained from motor accessory shops and fitted immediately above the switch in either the radio box lid or the deck/hatch of a waterproof compartment. They are extremely easy and quick to remove and replace and are completely watertight when their rubber lips are smeared with a thin film of silicone grease.

Servo Mountings

Finally, before we move on to linkages, a few words about servo mountings and aerials. Some means of absorbing vibration with i.c. powered models is required. Nearly all servo cases are supplied with four rubber feet or grommets which are included for just that purpose and not to make your installation more difficult. Most sets also supply ready-made servo trays, but if these are not available, then make one from ⅛in ply or plastic laminate, and do not screw down until the grommet is compressed solid – just drive the screw home until the rubber is only nipped. Very recently, servo fixing packs include small brass spacers which fit within the grommets and guarantee a correctly torqued fitting.

Servo tape is a sponge plastic material, approximately ⅛in thick, with contact adhesive on both sides. The sponge absorbs vibration and takes up slight uneven surfaces. Whilst the tape sticks perfectly to smooth areas, such as servos, it is not too good on rougher wooden surfaces which need to have a coat of varnish or balsa cement smeared over them first. The figure shows a typical arrangement


SERVO TAPE
GROMMET & SCREW
AND OR
RUBBER STRIP
1/8"PLY PLATE
SUPPORT BLOCKS TO HULL BOTTOM
EPOXY WELL
LOOP ON Ae TO AVOID INJURY
PIANO WIRE SOLDERED INTO HOLE IN 4BA BOLT
BOLT
NUT.1.
NUT.2.
4 BA BOLT & NUT. SOLDER ANOTHER NUT TO NUT ON BOLT FOR SCREWING TO DECK MOUNTING
4 BA BOLT
GROMMET
NUT & WASHER
DECK
SOCKET
BRASS TAG SOLDERED TO BOLT HEAD
MINIATURE JACK PLUG
RX
Ae INPUT

which would be ideal for scale models without the need of any restraining sides to prevent servo movement. However, it is not recommended for i.c. power, fast electrics and yachts, where considerable forces can be generated at the control surfaces, unless the servos are physically prevented from moving, for example, mounting them in a close-fitting watertight radio box.

Aerials

Most receivers are supplied with a length of plastic covered wire, around 20in long, emerging from the case. The most important principle is to maintain this length in any subsequent installation operation, ie, if you intend to fit a vertical whip aerial of 16in length, the remaining wire between aerial base and receiver, assuming a 20in original wire, should be 4in.

Modern radio equipment has a range capability far in excess of normal boating requirements and for general or sports boating, simply running the receiver aerial from stern to bow under the deck or along the superstructure is satisfactory, but with the advent of split crystals and much closer frequency operation, a telescopic or whip vertical aerial must be fitted for competitive power or sailing events. The telescopic aerial has lost favour as it is easily damaged and is relatively expensive when compared to a whip aerial constructed from a length of piano wire. A number of commercial whips are now available; however the aerial shown is easy to make and has the advantage of being removable to ease transportation. The construction is self explanatory from the drawing, but please remember to bend a loop on the top of the piano wire to avoid injury to eyes. The jack-plug and socket allows use of the radio-box in other models, of course.

Next time we will cover linkages, interference and trouble-shooting.

DISPLAY YOUR MODELS IN THE

NEW VUCASE

by

'BRYMOD'

BRYAN POLDEN

Ensure your models are protected in one of our showcases.

Send an S.A.E. and your individual requirements will be quoted for by return. Any shape or size.

34 Belvedere Road,
Charminster, Bournemouth
Dorset, England.
Tel Bournemouth 513643

PRINZ EUGEN

Scale 1:200

2 Sheet set of Drawings at £5.50+p&p
Also the full range of Drawings by
A & A PLANS, T.V., VERLAG, F. PRASKY
Delivery 7 days

All Conway Maritime Books supplied.

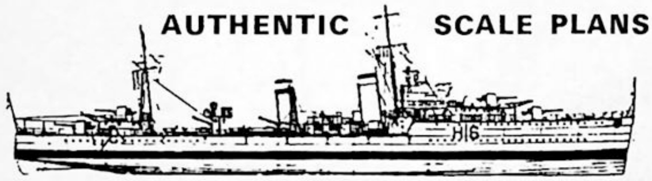
Latest: Destroyer Weapons of WWII **£7.50**+p&p
Masting & Rigging of English Ships of War **£20.00**
Big Gun Monitors by Ian Buxton **£9.95**

Airbrushes by Badger, Sprite; Limewood Sheet, Strip; Precision Peite Tools; Billing Kits.

For full list send S.A.E.

SAMBROOK MARINE (PLANS)
84-86 Broad Street, Teddington, Middlesex.
Tel: 01-977 4349

AUTHENTIC SCALE PLANS



A selection from our range. Prices include postage, packing and VAT. Postage overseas by surface mail included in price but airmail 15% extra. Cash with order. No C.O.D.

MAIL ORDER ONLY

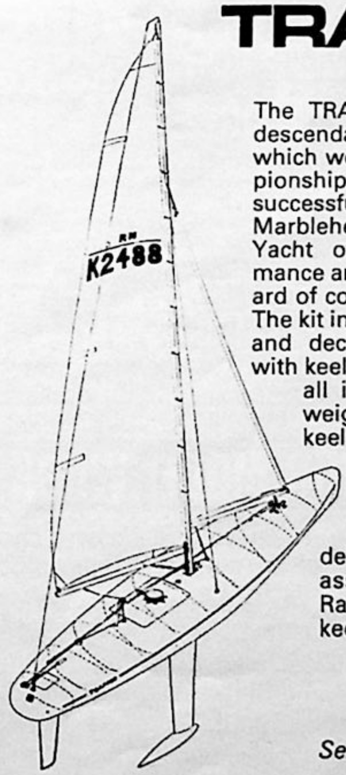
O/S/1A, B	HMS **Duke of York** (battleship)	1/16"	46"	**£4.15**
O/S/4A–G	HMS **Hood** (battle cruiser) ..	1/16"	53"	**£8.43**
O/S/9A, B, C	HMS **Sheffield** (cruiser) ..	1/16"	37"	**£4.63**
O/S/17A, B	HMS **Kashmir** (destroyer) ..	1/8"	45"	**£4.15**
O/S/5A, B	HMS **Amethyst** (frigate) ..	1/8"	37"	**£3.32**
W/5A, B	HMS **Byrony** (corvette)	1/8"	26"	**£3.56**
W/5C–F	HMS **Bryony** (corvette)	1/4"	52"	**£9.62**
O/B/1A	**Steam Packet Boat**	1/2"	25"	**£1.78**
W/14C, D	HMS **Lady Shirley** (armed trawler)	3/16"	33"	**£3.56**
L/S/1	HMS **Grey Goose** (steam gunboat)	1/8"	18"	**£1.78**
W/16A, B, C	**Scharnhorst** (German battleship)	1:200	46"	**£7.12**
D/17A–M	HMS **Victory**	1/8"	27"	**£10.09**
D/62A, B	HMS **Dolphin** (brigt'n)	1/4"	27"	**£4.15**
M/9A, B	**Ibex** (Brixham trawler)	1/4"	19"	**£3.08**
W/2A, B	mv **Ross Heron** (trawler) ..	1/4"	30"	**£3.56**
D/55A, B, C	**Farquharson** (E. Indiaman) ..	1/8"	24"	**£4.98**
D/96C, D, E	**Thermopylae** (clipper)	1/8"	29"	**£5.34**
D/57A, B	**Neilson** (brig)	1/4"	27"	**£3.92**
D/14C, D, E	**M. A. James** (schooner) ..	1/4"	26"	**£4.63**
D/43A, B	HMS **Fly** (1763 cutter)	1/4"	13"	**£3.56**
D/35A, B	**Venta** (Thames barge)	1/4"	22"	**£3.56**
W/6A, B	ps **Reliant** (tug)	1/4"	26"	**£4.27**

All plans include lines, decks, sails or elevations. **32-page Catalogue** available with 170 illustration. Price **50p** ($2 of £1 abroad)

David MacGregor Plans Dept. MB 69
99 Lonsdale Road, London SW13 9DA

TRAPPER

MARK III



The TRAPPER RM is a direct descendant of the SQUIBLET which won the 1976 RM Championship. It represents a highly successful attempt to produce a Marblehead Class Radio Control Yacht of outstanding performance and of the highest standard of construction and finish. The kit includes a one-piece hull and deck moulding complete with keel trunk, rudder tube and all internal stiffening etc., weighing under 3lbs. Fin keel cut to profile, rudder blade cut to profile, mast, booms, fittings, rigging, suit of Bantock 'A' rig sails, set of detailed drawings and assembly instructions. Radio, winch and lead keel are not included.

Kit price £107.48
incl VAT plus £3.00
UK Carriage.

Send for further details.

OLIVER J. LEE
Park Road, Burnham on Crouch
Essex CM0 8ER *Tel:* **Maldon 782305**

R. & A. MEARS
MODEL MAKERS & SUPPLIERS

We have pleasure in announcing that we are STOCKISTS AND AGENTS for:

M.A.P. Plans as in Plans Handbook No. 2 & 3.

Argus Books relating to Locomotives, Boats and Workshop equipment.

Arrand Engineering Comprehensive range of their products.

Stuart Turner Ltd. Stationary Engines & fittings.

A. J. Reeves Birmingham Ltd. Comprehensive range of their products.

Steam Age Comprehensive range of their fittings.

Loco Steam Comprehensive range of their products. Authorised supplier of the Quorn Tool & Cutter Grinder by Professor Chaddock.

M.E.S. Services Goods obtained on indent.

Send for catalogue and price list to:

P.O. BOX 85 PADSTOW 2211
N.S.W. AUSTRALIA

In answer to popular demand

MAIL ORDER MODELS

again offer

Carla Augusto Ship Kits at ridiculous prices

Yacht Olandese 1670	**£14.50**
Royal Sovereign 1639	**£58.00**

Inc. p&p. No hidden extras.

MAIL ORDER MODELS
Access
Buy it with Access
33 Seaside, Eastbourne. 0323 638 333
Phone orders with card numbers with pleasure.
BARCLAYCARD

Make it Legal . . . get your R/C licence!

Just in case some newcomers to the hobby are not aware, operation of radio control equipment requires a licence. This costs £2.80, but it covers a five-year period, so at 56p per year, the licensing fee can't be described as expensive. Licence application forms are obtainable from: *The Home Office, Radio Regulatory Dept., Waterloo Bridge House, Waterloo Road, London, S.E.1.*

RED BARON MODELS LTD.

497 HERTFORD ROAD, ENFIELD,
MIDDLESEX EN3 5XH

FOR SAILMAKERS

AT LAST: We have obtained a quantity of the best quality plastic reinforced nylon, absolutely air proof, very, very light in weight, it's used in the manufacture of competition stunt kites, only in bright red at the moment, 38" wide, **£2.00** per yard.

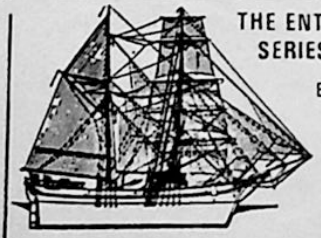
SCALE KIT BUILDERS: An interesting, out of the rut, modern diesel tug. "ARKAGAS". 34", all pre-cut, plank-on-frame kit, with superb fittings at around **£60.00.**

Send 35p for our latest list of fittings and E.P.A. fibreglass hulls. Complete stock of Plastruct, ABS section lengths. Catalogue 40p inc p&p.

TELEPHONE: **01-804 7452** — ASK FOR BRIAN THE BOAT

Monday to Saturday. Closed Wednesday. Late Night Friday 7pm
Park Outside – Mail Order – Access – Barclaycard – Hobby-Card

SHIP PLANS FOR MODEL WORK



THE ENTIRE SAILING SHIP & POWER CRAFT SERIES OF AUTHORITATIVE DRAWINGS

By Harold A. Underhill, A.M.I.E.S.
By Courtesy of the Executors

Illustrated list of 70 Sailing Ship Designs 60p

Illustrated list of 35 Power Craft 40p

From Leading Dealers or direct from:

BASSETT-LOWKE LTD.
KINGSWELL STREET, NORTHAMPTON NN1 1PS

USE H.M.G. AND MAKE THE JOB

The finish to any model is as important as the making. H.M.G. products are specially produced to give you a superb finish on a solid construction.

- * HEAT & WATERPROOF ADHESIVE
- * ALL PURPOSE CLEAR ADHESIVE
- * MARINE FINISH
- * S.P. HOT FUEL PROOF DOPE
- * BALSA CEMENT

SP
H.M.G
BALSA CEMENT
POLYSTYRENE CEMENT

**Look for the new, eye-catching H.M.G. packs at your local model shops today!*

H.M.G.

H. MARCEL GUEST LTD.
Riverside Works, Collyhurst Road,
Manchester, M10 7RU.
Tel: 061-205 5551/3

look!
low prices

DIESEL and GLOPLUG MARINE ENGINES

Kosmic 23 R/C	**£27.77**
KB 3.5	**£45.29**
KB 40 sport	**£45.29**
ED Racer R/C 2.46cc	**£15.29**
ED Hunter R/C 3.4cc	**£19.41**
ED Sea Otter 3.4cc	**£22.01**
ED Viking 4.9cc	**£25.11**
ED Sea Lion 5cc	**£26.43**
Veco 19 R/C	**£32.26**
Veco 61 R/C	**£64.68**
Merco 49 R/C	**£35.13**
Merco 61 R/C	**£39.77**

Many more Aero and Marine. New Zealand orders welcome Send 10p P.O. for Lists. Duty free – Export only. Duty & VAT liable UK customers.

THE MODEL SHOP, (Guernsey)
No. 1, Commercial Arcade, Guernsey, C.I.

VIC SMEED PLANS: River Queen 35in steam launch £1.25. Tiddler tug 20in, 65p; Moonwind, simple 33in cruiser, 90p; Melinda, 35in river launch, £1.10; Steam trawler, 1930, 37½in, £1.50; American tug Akron, 25½in, £1. Demon Marblehead, £1.40; Snow Goose 36R, £1. All fully structural drawings. Ten yacht designs by Roger Stollery, A, 10r, M, and RM (lines) now available. ALSO AVAILABLE: Clyde Ship Plans as follows: Clyde Puffer, traditional, ¼in, 17½in 60p; Pilot Boat MV Cumbrae ⅛in, 34in 80p; T.S.M.V. Princess of Vancouver, ⅛in, 52in £1.00; P.S. Jeanie Deans, 1932 (slight fading), ⅛in, 32in 90p; P.S. Waverley, 1947, ⅛in, 31in 90p; P.S. Columba, 1878, ⅛in, 39in £1.00; P.S. Caledonia, ³⁄₁₆in, 43in £1.25; Tug Turmoil, ³⁄₁₆in, 38in £1.00; Black Swan frigate Amethyst, ⅛in, 37½in 80p; Steam/turbine gunboat Grey Goose,• 36in £1.25; Hunt class destroyer 35in 80p. Fairmile type D, MTB.• 41½in £1.25. •With model structure details.

SMALL BRASS SCREWS. Countersunk ½ x 0 11p per doz, 85p 100; ½ x 1, ½ x 2, ⅜ x 1, ⅜ x 2 all 10p doz., 75p 100. Round head ½ x 1, ½ x 2, ⅜ x 1, ⅜ x 2, 12p doz., 90p 100. Special offer pack – approx. 100 ⅜ x 2 and 100 ½ x 3 brass plated csk. screws, £1 inc. post. Limited quantity.

'MODEL YACHTING' by Vic Smeed. A really down-to-earth book covering all aspects of modern sailing, vane and radio, construction, fittings – everything you need to know. Includes 170 sketches, nearly 100 photos. Price £2.90 inc p&p in UK. Overseas £3.25 ($7 US) surface, £3.75 ($8 US) air.

VIC SMEED, PO BOX 6, CROXLEY GREEN
RICKMANSWORTH, HERTS WD3 4RE

Trade supplied. **Send 25p for list.** Any screw or plan order add 10p post

---

SAILS VOILES, VELAS

By GRAHAM J. BANTOCK

'Whether beginner or expert, a new suit of BANTOCK SAILS can boost your boat's performance.

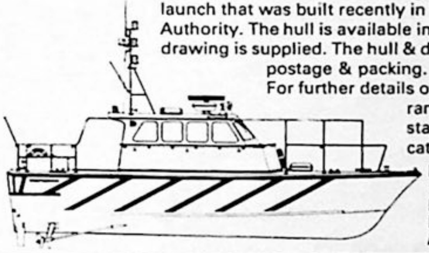
Write for details of the RM 'PICKAXE' kit.

Renseignements en français **Informes en español**

Graham J. Bantock, 30 Winstree Road,
Burnham-on-Crouch, Essex, England.
Telephone: Maldon (0621) 783890.

For the very best in fibreglass model boat hulls

Kingston Mouldings



New this month is a 35in long by 11in beam hull of a pilot launch that was built recently in Holland for a French Pilotage Authority. The hull is available in grey or white, and a detailed drawing is supplied. The hull & drawing cost £13.85 plus £1.50 postage & packing.

For further details of this and our comprehensive range of scale hulls, send a stamp for our latest illustrated catalogue.

Kingston Mouldings
115 Commercial Road
Lower Parkstone
Poole, Dorset
Please note we have moved

NJM

BOOKS		p&p
Model Racing Yacht Constr. Revised	**£2.95**	30p
R/C Model Yachts	**£1.50**	20p
New Glassfibre Book	**£2.25**	30p
Model Yachting	**£2.75**	25p
Power Model Boats	**£1.75**	30p
Mod. Steamer building	**£1.50**	15p
Mach f. Mod. Steamers	**£1.50**	15p
Mod. Steam Turbines	**£1.50**	15p
Boat Modelling	**£1.50**	30p
Model Boat Props	**75p**	20p
Making mod. ships ftgs.	**£1.25**	20p
Fam. Paddle Steamers	**£1.75**	30p
Ill. Marine Encyclop. 1890	**£8.50**	90p
Techniques of Ship modelling	**£4.00**	50p
Anatomy of Nelson's Ships	**£10.50**	90p
17th Century Rigging	**£2.50**	35p

'BUILDING WARSHIP MODELS'
by P. C. Coker **£16.50** pp90p
Temporarily out of stock

1979 Ripmax H'book	**£1.95**	60p
Sale: (one only)		
Helgoland + Fittings, 40" (Buyer collects)	~~£64.55~~ **£49.50**	

POSTAGE EXTRA ON ALL ITEMS

RADIO CONTROL	
MacGregor lch/IS dry	**£45.00**
MacGregor 2 ch/2S dry	**£67.00**
MacGregor 3 ch/2s dry	**£82.50**
M.G. MR 12 Servo	**£17.50**
STEAM	
Unit Steam Engine, kit	**£8.95**
Unit Boiler	**£18.75**
Unit 'Pop-Pop'	**£3.10**
Willesco Eng. & Boiler	**£26.95**
Saito 2 cyl. Engine	**£50.00**
Saito Boiler and Burn.	**£38.00**
Press. Gauge, 30lb, 1⅜ dia.	**£2.45**
ENGINES	
NEW Fox F7 22cc, 2/T	**£89.95**
HB 40 PDP pumper R/C W/C	**£70.75**
Merco 61 R/C, W/C	**£42.95**
ENYA 15 R/C, W/C	**£26.35**
ENYA 19 R/C, W/C	**£28.85**
ENYA 29 R/C, W/C	**£31.50**
ENYA 35 R/C, W/C	**£32.95**
ELECTRIC MOTORS	
Jumbo 750, 10V	**£8.90**
Decaperm Spcl. 6V	**£11.50**
Duoperm 6V, 30W	**£9.70**
RIAM M7, 12V 85 Watt	**£10.80**
M-1 Motor, 6V, 3.5A	**£2.20**
1.2V, 1.2A Nicad	**£1.65**
1.2V, 2A Nicad	**£2.70**
1.2V, ½A Nicad	**£1.50**

STAMPED ADDRESSED ENVELOPE WITH ENQUIRIES PLEASE
Second-hand equipment bought & part exchanged
PHONE IN – ACCESS & BARCLAYCARD ACCEPTED

NORWOOD JUNCTION MODELS
3 ORTON BLDGS, PORTLAND RD, LONDON SE25. 01-653 4943

Hours: 9.30–6pm **Wed. 1pm early closing**

AERO NAUTICAL MODELS

39 Parkway, Camden Town,
London NW1 7PN
01-485 1818

Hours: 9.15-5.30 Tue.-Fri.; 9.15-5pm Sat. Closed Monday
ACCESS – BARCLAYCARD – AMERICAN EXPRESS CARDS

A.N.M. Fibreglass Hulls:

NEW – SEA HOUND

31in hull for 2½-5cc or electric power. Medium 'V' superb sports hull. Stable but responsive with setting up details. **£8.10** carr £1.00.

SWORDSMAN FPB

Very popular model, 33in, complete with hull, deck and superstructure. Pleasing, different appearance, see last month's ad for details. Complete **£18.90** carr £1.75. Hull only **£9.95** carr £1.00.

PINNACE

Scale 1900-1920 Royal Navy Pinnace, 35½in L.O.A. for electric or steam power. Complete with cabin moulding. **£9.95** carr £1.00. Available to special order: moulding in heat resistant epoxy **£11.95** carr £1.00.

SMIT

Ocean tug hull, suitable for electric power, not unlike kit of similar namel **£9.95** carr £1.00.

TIGERKATT

Tunnel hull for 60 engines. Out drive. Very fast, turns on a tanner (2½p piece). **Unofficial.** A Tigerkatt in the States was clocked at over 90 mph with a turbo ducted fan on top! **£32.40** carr £2.50. *With setting up instructions.*

Please note: Regret no letters answered unless accompanied by a S.A.E. or overseas an I.R.Co.

MODELMAKER

11 POETS WALK, PENRITH, CUMBRIA
Tel: Penrith 5378

CUMBRIA'S LEADING MODEL BOAT CENTRE
AND STEAM SPECIALIST

Large range of kits by Mantua, Aeropicolla, Sergal, Corel, Humbrol, Aerokits. **Billing main agent.**

- **Large stock of timber for the boat modeller**
- **Stuart Turner, castings, boilers and fittings**
- **Sanwa and Futaba radio gear**
- **Tools and accessories**
- **Stockist of Cowells Lathes & Accessories**
- **Barclaycard, Access, Hobbycard**

SCOTLAND

EAST AND WEST

Now making personal shopping more practical for the majority of Scottish modellers–but still only as far away as the telephone if it has to be mail–order

Authorised Skyleader Service Agents

DUNNS MODELS

26 GLASGOW ROAD
PAISLEY TEL. 041. 840.1381

29 SCOTT STREET
PERTH TEL. 0738 24540

MICHAEL'S MODELS FINCHLEY

MICHAEL'S MODELS

646–648 HIGH ROAD
N. FINCHLEY, LONDON N12 0NL

We are the largest Stockists of Ship's Fittings in North London. Send us your plan of the items you require for a proforma invoice by return.

ALL GEARED UP

We have just received fresh deliveries of a superb range of Brass Gears from H.A.W.N. : 40mmØ **£2.16;** 30mmØ **£1.51;** 25mmØ **£1.35;** 20mmØ **£1.07;** 15mmØ **88p;** 13mmØ **81p;** 10mmØ **76p;** 8mmØ **71p;** 7mmØ **68p;** 6mmØ **68p.**

40mm to 20mm – 3mm shaft; 15mm to 6mm – 2mm shaft.

The above gears are most suited for heavy duty applications such as Marine Gearboxes on Scale Models.

We are pleased to announce that we now hold very large stocks of Racing Models and S.H.G. Marine Hulls and Racing Accessories.
AMPS Aluminium Props 1815, 2018, 2020, 2025 – all **£2.90**

NEW FULLY COMPREHENSIVE BOAT LIST contains Period/Modern Fittings List, Wood List, Engine List and Racing & Sport List. Send **40p** in stamps, refundable, with first order. **MAIL ORDER – PARK OUTSIDE – 01–445 6531**

STAGG MODELS

HOBBY CENTRE

Mike and Wendy Boardman
20 Derngate, Northampton NN1 1UB
Tel. Northampton 35718

KITS: Large selection of boat kits by: Billing, Ark, Humbrol, P.B.M., Robbe, Aerokits, Veron, etc. Duplex hulls in stock.

ENGINES: O.S., Webra, O.P.S., Veco, Merco, Meteor, etc.

RC EQUIPMENT: MacGregor, Sanwa, Waltron, Micromold, Sprengbrook, etc.

STEAM: Stuart Turner steam engine castings and machined parts, boilers and fittings.

PART EXCHANGE WELCOME
LATE NIGHT OPENING – FRIDAY TILL 7 p.m.
Mail Order – Access – Barclaycard

P. and A. MODELS

Have now moved to a New Works Address

109 TILSWORTH ROAD, STANBRIDGE,
NEAR LEIGHTON BUZZARD, BEDS.
Tel: Hockliffe (052521) 848

Gaucho Marblehead Hull **£24.84 inc. V.A.T.** (any colour)
Playaway 36in Hull **£16.20 inc. V.A.T.** (any colour)

Please send 20p for details

AUSTRALASIA – Agents & Stockists of M.A.P. Argus Technical books and plans, magazine subscriptions.

Also stockists of Brant Wright Associates books on clock construction. We have drawings, castings, parts for Stationary steam & petrol engines. From Whelan Models, Woking Precision Models, Lancer engineering, Impex Engineers, Stuart Turner. *Please send 60c in stamps to cover Cowells postage cost in Australia* of catalogue & book lists. Also stocking *Cowells Engineering Ltd.* products.

WORLDWIDE ENGINEERING & HOBBY IMPORTS EXPORTS
3 Carramar Crescent, MIRANDA, N.S.W. 2228, AUSTRALIA.
Ph. 02 5249889

ACCESS • HOBBYCARD AND QUAD FINANCE • BARCLAYCARD

RADIO-ACTIVE
(MODELS)

Specialists in Radio Controlled Models, Kits and Accessories

BOAT KITS GALORE

Saito DDK 116, Graupner Wiesel, Bugsier 3, Revell/Hegi Oceanic, Precedent Hanseat, K.D. Perkasa (fibreglass 49in length) and wooden version, Mk 3 Trapper, Aerokits Tara, Dumas Shelley Foss, Aerokits Torpedo Boat. Full range of Billings, Aeropiccola, Corel boats and fittings kits. These are just a few of our kits.
We also have a full range of accessories, engines, electric motors etc. and the ever-popular Radio-Active whip aerials and boat props. Our staff are happy to help and advise on any problems you may have.

94 ARDLEIGH GREEN RD., HORNCHURCH, ESSEX **Tel: Hornchurch 40016**

SHOP GUIDE

READERS PLEASE NOTE:
Due to soaring postals charges many retailers are unable to answer postal enquiries unless accompanied by a stamped addressed envelope.

★Mail Order Welcome

AUSTRALIA

MELBOURNE 3000 Tel. 347 8029
RIVERSIDE HOBBY CENTRE, ★
16 LITTLE LATROBE STREET
9am–5.30pm Mon-Fri
9am–12 noon Sat

AVON

BRISTOL 5 Tel. 557764
AVONAIRE MODELS ★
351 CHURCH ROAD, St GEORGE
9am–6pm Mon-Thur.
Late night Fri 7pm
Half day Wed

BRISTOL Tel. 662544
BEV'S MODELS, ★
35 WEST STREET, BEDMINSTER
Mon-Sat 10am-6pm
Wed 10am-1pm
Fri 1pm-7pm

BEDFORDSHIRE

BEDFORD Tel. 60884
J. & A. MODELS ★
6 WENDOVER DRIVE
Open: Tues-Sat 10am-6pm
Sunday 10am-1pm
Closed all day Monday

LUTON Tel. 28435
MAPLE MODELS, ★
16 MAPLE ROAD
9.00am–5.30pm
Lunch 1.30pm–2.30pm
Closed Monday

LUTON Tel. 36218
TAYLOR & McKENNA,
73 ARNDALE
Open: 9am to 5.30pm
Mon to Thurs
9am to 6pm Fri and Sat

BERKSHIRE

READING Tel. 51558
READING MODELS ★
5 CHATHAM STREET
9.00am to 5.30pm each weekday

SLOUGH Tel. Slough 39419
SLOUGH RADIO CONTROL
MODELS ★
273 HIGH STREET
Mon. Tues, Thurs & Sat
9.30am–6.00pm
Wed 9.30am–1.00pm
Fri 9.30am–8.00pm

WOKINGHAM Tel. (0734) 786522
LINCOLN MODELS & HOBBIES
85 BEANOAK ROAD
Open 10.30am–5.30pm
Wed 10am–1pm
Fri 10am–7pm Sat 10am–6pm

BUCKINGHAMSHIRE

AYLESBURY Tel. 85752
TAYLOR & McKENNA LTD.,
46 FRIARS SQUARE
Mon–Thurs 9am–5.30pm
Fri–Sat 9am–6pm

BLETCHLEY Tel. MILTON KEYNES 70478
TAYLOR & McKENNA LTD.,
16 THE CONCOURSE,
BRUNEL CENTRE
Mon Thurs 9am– 5.30pm
Fri–Sat 9am–6pm

CAMBRIDGESHIRE

CAMBRIDGE Tel. 59620
MODEL MANIA ★
17 KING STREET
Mon-Sat 9.30am-5.30pm
Incl. lunchtime

ELY Tel. Ely 4268
DOWNHAM R.C. MARINE,
37 MARKET STREET
Closed Tuesday. Open late Friday

CHESHIRE

CHEADLE HULME
Tel. 061-427 3200
CHESHIRE MODEL
SUPPLIES LTD.,
55 CHEADLE ROAD
Mon–Sat 9am–6pm

STOCKPORT Tel. 061-480 5478
THE MODEL SHOP,
280 WELLINGTON ROAD SOUTH
Open Mon–Sat 9am–5.30pm
Closed Tuesdays

WIDNES Tel. 051-420 7171
WRIGHTS RADIO MODELS ★
75 VICTORIA ROAD
Open 9am-1.15pm; 2.30pm-6pm
Open all day Sat
Closed all day Wed

CLEVELAND

MIDDLESBROUGH Tel. 211212
HOBBYDROME,
283 LINTHORPE ROAD,
Open: 9.30am–5.45pm
Late night Friday 8pm
Closed Wed.

CORNWALL

FALMOUTH Tel. 314902
RAILCRAFT OF CORNWALL ★
103 KILLIGREW STREET
Mon-Sat 9am-5.45pm

CUMBRIA

PENRITH Tel. 5378
MODELMAKER
11 POET'S WALK CA11 7HJ
Open: Mon–Sat 9am–5.30pm
Fri closed 6pm
Half day Wednesday

DERBYSHIRE

SPONDON Tel. 62771
SUPER MODELS, ★
3 CHAPEL SIDE
9am–6pm (5.30 Sats). Closed Wed

DEVON

EXETER Tel. 35118
EXETER MODEL CENTRE LTD ★
39 SIDWELL STREET
Open 9am-5.30pm
Late night Fri

PLYMOUTH Tel. 0752 21851
PLYMOUTH MODEL CENTRE ★
11 OLD TOWN STREET
9am-5.30pm
Monday to Saturday
Late night Friday 6.30pm

PLYMOUTH Tel. (0725) 53330
RUNWAY SOUTHWEST ★
16 DEVONPORT ROAD,
STOKE, PLYMOUTH
Mon-Sat 9am-6pm
Fri 9am-8pm

TORBAY Tel. 0803 521767
MANSELL'S MODELS ★
PALACE AVENUE, PAIGNTON
Open 9.15am–5.30pm
Mon to Sat inc.
Half day Wed.
Late night Friday 7pm

DORSET

BOURNEMOUTH Tel. 763480
WESTBOURNE MODEL CENTRE, ★
59 SEAMOOR ROAD,
WESTBOURNE
Open: 9am–5.30pm Mon–Sat

ESSEX

BRENTWOOD
Tel. Brentwood 226787
ARNOLD'S GIFT CENTRE,
4 HIGH STREET
Open: 9am–6pm
Half day Thursday

CLACTON-ON-SEA Tel. 23941
ANGLIA SCALE MODELS LTD.,
48 ROSEMARY ROAD
Open 9am–5pm
Monday to Saturday

COLCHESTER Tel. 65848
ANGLIA SCALE MODELS LTD.,
22 NORTH HILL
Open 9am–5pm
Monday to Saturday

HORNCHURCH Tel. 40016
RADIO ACTIVE ★
94 ARDLEIGH GREEN ROAD
Mon, Tues, Thurs and Sat
9am–6pm
Fri 9am–7pm. Half day Wed.

LEIGH ON SEA Tel. Southend on Sea 79035 ext. 4
WINGS & WHEELS ★
1472–1476 LONDON ROAD
Open 9am–6pm Mon–Sat
Early closing Wed

WICKFORD Tel. (037 44) 2621
WICKFORD MODEL EXCHANGE ★
ST. PETERS TERRACE
LONDON ROAD
Open: 9.30am-6pm Mon, Thurs-Sat
Late night Thurs 7pm. Closed
Tues and Weds. Sun 10am-1pm

HAMPSHIRE

ANDOVER Tel. 61307
RADIO CONTROL SUPPLIES, ★
1a UNION STREET
Open 9am-6pm, Fri 9am-8pm
Closed Monday

FAREHAM Tel. 234136
G. M. H. BUNCE & CO. LTD., ★
206 WEST STREET.
Open 9am–5.30pm. Closed Wed.

FARNBOROUGH Tel. 44600
DONS MODELS,
24A QUEENS ROAD,
NORTH CAMP
Open Mon–Sat 9am–6pm
Closed all day Tuesday

PORTSMOUTH Tel. 25049
RAY BROWN MODELS, ★
10 KINGSTON ROAD
Open: 10am–5.30pm
Lunch 1pm–2.30pm
Closed all day Wednesday

SOUTHAMPTON Tel. Eastleigh 617849
EASTLEIGH MODEL CENTRE,
2e HIGH STREET, EASTLEIGH
Open 9am–6pm. Half day Wed.

SOUTHAMPTON Tel. 25919
HOBBY LOBBY LTD.,
52 COMMERCIAL ROAD
Open 9.30am–5.30pm Mon–Fri
Sat 9.30am–5pm

SOUTHAMPTON Tel. 29223
SOLENT MODELS LTD,
60 OXFORD STREET
Open Mon-Sat 9.30am-6pm

HERTFORDSHIRE

HATFIELD Tel. 63404
DESIGN AND HOBBIES ★
5 MANOR PARADE
Open: Mon–Sat 9.30am–6pm
Thurs closed 7pm
Closed all day Wednesday

HEMEL HEMPSTEAD Tel. 53691
TAYLOR & McKENNA LTD.,
203 MARLOWES
Mon–Thurs 9am–5.30pm
Fri–Sat 9am–6pm

HEMEL HEMPSTEAD Tel. 54173
WALLER & ARIS
31 HIGH STREET
Mon-Sat 9am-5.30pm
Wed 9am-1pm

HERTFORD Tel. 50101
MODELLERS WORLD ★
4 OLD CROSS
Open: 9am–5.30pm
Late night Friday 7pm
Closed Thursday

ST. ALBANS Tel. 53954
SAMS
12 HATFIELD ROAD
Mon–Fri 9am–6pm
Sat 9am–5.30pm

HONG KONG

HONG KONG Tel. 5-762630
HONG KONG HOBBY CENTRE ★
2 FOO MING STREET,
I/F, "B" CAUSEWAY BAY,
HONG KONG.
Open 10am–7pm

HONG KONG Tel. 3-680507
RADAR CO. LTD., ★
3 OBSERVATORY ROAD,
TSIMSHATSUI,
KOWLOON.
Open 10am–7pm. Closed Sundays

HONG KONG Tel. 3-684184
WINNING MODEL & HOBBY
SUPPLIES, ★
2A, AUSTIN AVE., KOWLOON.
HONG KONG.
Open 10am–7pm. Closed Sunday

KOWLOON Tel. 3-800155
SCIENTIFIC HOBBIES LTD., ★
185-D PRINCE EDWARD ROAD.
Open 10am–8pm
Sunday closed

NORTH HUMBERSIDE

HULL Tel. 43701 Hull
REG BEAUMONT
MODEL SHOP
150 CHANTERLANDS AVENUE
Mon–Wed, Fri & Sat
8.30am–5.30pm
Thurs 8.30am–1pm

SOUTH HUMBERSIDE

GRIMSBY Tel. 42574
EVINGTON JAKES LTD.
3 & 5 ALEXANDRA ROAD
Open 9am–1pm & 2.15pm–5.30pm
Except Thurs

KENT

BROMLEY Tel. 01-460 0818
AVICRAFT LIMITED ★
15 CHATTERTON ROAD
Open: 10am–6pm
(not closed for lunch)
except Wed 10am–1pm

CANTERBURY Tel. 0227 53896
CANTERBURY MODEL SHOP ★
4 BUTCHERY LANE
Open 9am–5.30pm Mon to Sat

LARKFIELD Tel. West Malling
845873
LARKFIELD MODELS,
777/9 LONDON ROAD,
LARKFIELD, MAIDSTONE
Open 9am–6pm Mon–Sat

MAIDSTONE Tel. 51719
THE MODEL SHOP ★
19-23 UPPER STONE STREET,
Open 9.30am–1pm,
2.30pm–5.30pm
Closed all day Wed

TEYNHAM Tel. 522020
WESTON MODEL CENTRE ★
(WESTON UK)
84-86 LONDON ROAD,
NR. SITTINGBOURNE ME9 9QH
Open: Mon–Sat 9am–8pm

LANCASHIRE

ASHTON-UNDER-LYNE
Tel. 061-330 1137
ASHTON MODEL SUPPLIES, ★
201 OLD STREET
9.30am–6pm Mon–Fri
9.30am–5pm Sat
Closed Tuesdays

FLEETWOOD Tel. 039-17 5677
FLEETWOOD MODEL CENTRE,
185 LORD STREET
Late night Fri 7.30pm
Half day Wed 12.30pm
Other days 5.30pm

LANCASTER Tel. 65129
LANCASTER MODEL SHOP ★
8 CHINA STREET
Open: 9.30am–5.30pm Mon, Tues,
Thurs, Fri. 9.30am–12 noon Wed.
9am–5pm Sat

LIVERPOOL Tel. 051-709 8039
STAN CATCHPOLES ★
MODEL WORLD,
85 BOLD STREET
9.30am–5.30pm. Six days

PRESTON Tel: 51243
PRESTON MODEL CENTRE ★
LIMITED,
(Opposite Polytech.),
2 Fylde Road,
Open: 9.30am–6pm Mon–Sat

WIGAN Tel. 45683
G. FORSHAW & SON,
58 MARKET STREET
Open 9.15am–5.45pm
Early closing Wednesday

LEICESTERSHIRE

LEICESTER Tel. 0533 771397
MODELCRAFT ★
5 CROSS STREET, BLABY
Open; 9am–6pm
Closed all day Wed

LEICESTER Tel. 544529
RADIO CONTROL SUPPLIES, ★
52a LONDON ROAD
Open 9am–6pm, Fri 9am–8pm

LINCOLNSHIRE

LINCOLN Tel. 25907
THE MODEL CENTRE
24 NEWLAND, LN1 1XG
Open: Mon–Sat 9am–6pm
Early closing Wed 1pm

STAMFORD Tel. 4524
SPORTS & HOBBIES ★
4 ALL SAINTS STREET
Open 9am–5.30pm. Half day Thurs

LONDON NORTH

CAMDEN TOWN Tel. 01-485 1818
AERONAUTICAL MODELS, ★
39 PARKWAY, NW1
9.15–5.30 Tues–Fri
9.15–5pm Sat
Closed all day Mon.

LONDON Tel. 01-607 4272
HENRY J. NICHOLLS & SON LTD., ★
308 HOLLOWAY ROAD, N7
Open Mon–Sat 9am–5.30pm

LONDON SOUTH

GREENWICH Tel. 01-858 5661
MARITIME MODELS ★
7 NELSON ROAD, SE10
Open: Mon–Sat 9am–6.30pm;
Sun 10am–2pm
(when possible phone to check)

LONDON Tel. 01-703 4562
MODEL AIRCRAFT SUPPLIES LTD ★
207 CAMBERWELL ROAD, SE5
Open: Mon-Sat 10am-6pm
Fri 10am-7.30pm
Closed all day Thursday

LONDON Tel. 01-228 6319
E. F. RUSS, ★
101 BATTERSEA RISE, SW11
Open: Fri till 7pm
Other days 9am–6pm
Early closing Wed 1pm

LONDON EAST

LONDON Tel. 01-520 7397
ARNOLD'S GIFT CENTRE
132-134 HOE STREET, E17
Open 9am–6pm Mon–Sat
Closed Wed

MERSEYSIDE

LIVERPOOL Tel. 051-724 4926
THE MODEL SHOP ★
123 ALLERTON ROAD
Open: Mon-Sat 9am-5.30pm
Closed all day Wednesday

MIDDLESEX

ENFIELD Tel. 01-804 7452
RED BARON MODELS LTD., ★
497 HERTFORD ROAD
Open 9am–6pm, Fri 7pm
Closed all day Wed

HARLINGTON Tel. 01-897 2326
RADIO CONTROL MODEL ★
CENTRE,
214 HIGH STREET
Open: Mon–Sat 9.15am–6.30pm
Fri 9.15am–8.30pm
Closed all day Wednesday

HARROW Tel. 01-863 9788
THE MODEL SHOP ★
190-194 STATION ROAD
Mon-Sat 9.30am-6pm
Wed 9.30am-5pm

ISLEWORTH Tel. 01-560 0473
RADIO CONTROL SUPPLIES, ★
581 LONDON ROAD
Open 9am–6pm, Fri 9am–8pm

KENTON Tel. 01-204 9867
HOBBIES AND MODELS,
217/219 STREATFIELD ROAD,
QUEENSBURY CIRCLE
Open 9am–6pm, Thurs 9am–8pm
Closed all day Wed

TEDDINGTON Tel. 01-977 4349
TEDDINGTON MODEL SUPPLIES ★
84/86 BROAD STREET
Mon-Sat 9am-6pm
Wed Closed

WEMBLEY Tel. 01-902 4823
WALLY KILMISTER LTD.,
6 & 7 NEELD PARADE
Open 9am–5.30pm. Closed Wed.

NORFOLK

NORWICH Tel. 21959
LANGLEYS
ROYAL ARCADE
Open Mon-Sat 9am-5.30pm

NORTHANTS

NORTHAMPTON Tel. 35718
STAGG MODELS ★
20 DERNGATE
Open: 9am–5.30pm
Early closing 1pm Thurs

NORTHAMPTON Tel. 27726
TAYLOR & McKEENA LTD.,
41-43 PRINCES WALK,
GROSVENOR CENTRE
Mon–Thurs 9am–5.30pm
Fri–Sat 9am–6pm

NORTHUMBERLAND

NEWCASTLE-UPON-TYNE
Tel. 22016
THE MODEL SHOP, ★
18 BLENHEIM STREET
Mon–Fri 9am–5.30pm
Sat 9-6pm

NOTTINGHAMSHIRE

NOTTINGHAM Tel. 204040
M. A. CHAPMAN MODELS
18 MANSFIELD ROAD
DAYBROOK SQUARE
Mon-Sat 9.30am-6pm

NOTTINGHAM Tel. 50273
GEE DEE MODEL LTD., ★
19-21 HEATHCOTE STREET,
OFF GOOSEGATE
Open 9.30–5.30
Early closing Thurs

OXFORDSHIRE

OXFORD Tel. 42407
HOWES MODEL SHOP, ★
9-10 BROAD STREET
Open: 8.45-5.30pm
6-day week

RUTLAND

OAKHAM Tel (0572) 56100
RUTLAND SCALE MODEL ★
CENTRE,
11 MILL STREET
Open: 10am–5pm Mon–Fri
9am–5pm Sat 10am–4pm Sun
Closed all day Thurs

SCOTLAND

GLASGOW Tel. 041-632 8326
RIDDELL BROS., ★
61 MOUNT ANNAN DRIVE
Open 9am–6pm. Closed Tues

STAFFORDSHIRE

STAFFORD Tel. 3420
JOHN W. BAGNALL LTD., ★
18 SALTER STREET
9am–5.30pm.
Closed all day Wed

STOKE-ON-TRENT Tel. 263574
JOHN W. BAGNALL LTD.
30 PICCADILLY, HANLEY
9am–5.30pm.
Closed all day Thurs

STOKE-ON-TRENT Tel. 85856
PLEASURE TREASURES LTD., ★
4 SWAN SQUARE, BURSLEM
9.30am–6pm
Half day Thurs

SUFFOLK

IPSWICH Tel. 51195
BOWMANS OF IPSWICH ★
37/39 UPPER ORWELL STREET
Open 9am–5.30pm Mon to Sat
Early closing Wed

SURREY

ADDLESTONE
Tel. Weybridge 45440
ADDLESTONE MODELS LTD., ★
63 STATION ROAD
Open 9am–6pm
Closed all day Wednesday
Late night Friday 6.30pm

HORLEY Tel. 2412
HORLEY MODELS,
91 VICTORIA ROAD
9.15am–6.30pm
Closed Wed

KINGSTON ON THAMES
Tel. 01-546 4488
MICK CHARLES MODELS, ★
180 LONDON ROAD
Open: Mon, Tues, Thurs, Sat
9.30am–6.30pm
Wed 9.30am–1pm Fri 9.30am-9pm

WOKING Tel. 66493
WOKING MODELS, ★
9 GOLDSWORTH ROAD
9am–6pm Mon–Sat
Closed Wed afternoon

SUSSEX

BRIGHTON Tel. 418225
HARRY BROOKS, ★
15 VICTORIA ROAD,
PORTSLADE
Open every day except Sunday
8.30am–5.45pm (no half day)

TYNE & WEAR

NEWCASTLE-UPON-TYNE
Tel. 0632 22251
CLAYTON MODELS LIMITED ★
103 CLAYTON STREET
Open: 9.15am–5.30pm.
Thurs closing 7.30pm
Sat 9am–5.45pm

WALES

CAERNARFON Tel. 3265
GWYNEDD MODELS ★
17 BANGOR STREET
Open: 9.30am-5.30pm
Early closing Thurs 1pm
Late night Friday 7.30pm

CARDIFF Tel. 31367
RYALL & WALTERS RADIO ★
MODELS,
34 LLANDAFF ROAD
Open 9am–12.30pm
1.30pm–5.30pm
Monday 8pm. Closed Wed

GWENT Tel. Newport 55436
J.V. MODELS,
114 CHEPSTOW ROAD
NEWPORT
Open: 9am–5.30pm
Tues, Wed, Thurs & Sat
Late nights 8pm Mon & Fri

PONTYPOOL Tel. 58070
TREGARON MODELS ★
40b GEORGE STREET
GWENT NP4 6BY
Open: Mon 12–7; Tues, Weds
9.30–5.30; Fri 9.30–7.30;
Sat 9.30–5; Closed Thursday

SWANSEA Tel. (0792) 52877
SWANSEA MODELS & ★
HOBBIES LTD.,
PLYMOUTH STREET, SA1 3QQ
Open: Mon–Sat
Late night Fri 6pm

WARWICKSHIRE

BIRMINGHAM 10 Tel. 021-772 4917
BOB'S MODELS, ★
520-522 COVENTRY ROAD,
SMALL HEATH
Open 9.30am–6pm
Early closing Wed 1.30pm

BIRMINGHAM Tel. 021-554 5569
MODEL MECCA
(G. I. & N. ROWAND),
204 WITTON ROAD
Open 9am–6.30pm
Wed 9am–1.30pm
Sat 9am–6pm

WILTSHIRE

SWINDON Tel. 26878
SWINDON MODEL CENTRE, ★
2 CIVIC CENTRE,
THEATRE SQUARE
(Next to Wyvern Theatre)
Open daily 9am–5.30pm
Open all day Wednesday

YORKSHIRE

BRADFORD 8 Tel. 26186
MODELDROME, ★
182 MANNINGHAM LANE
9.30am–5.45pm. Closed Wed

BRIDLINGTON Tel. (0262) 79938
C. DENCH ★
38 THE PROMENADE
Open: 9am–6pm Six days Winter
9am–8pm Seven days Summer

BRIDLINGTON Tel. 0262 71399
NORTHWOLD TRADING CO., ★
22 WEST STREET
Open: Mon–Sat 9am–6pm
Half day Thursday
Open 7 days a week in Summer

DONCASTER Tel. 62524
B. CUTTRISS & SONS
40 DUKE STREET
Open: 9am–5.30pm
Closed all day Thurs

DONCASTER Tel. 20767
SOUTH YORKSHIRE MODEL ★
SUPPLIES,
313 BENTLEY ROAD, BENTLEY
Open: Mon, Wed, Thurs 10am–6pm
Tues 10am–1pm, Fri 10am–8pm
Sat 9.30am–5.30pm

KEIGHLEY Tel. 65662
AIREDALE MODELS ★
5 ROYAL ARCADE, LOW STREET
Open: Mon, Wed, Fri 10am-6pm
Thurs 10am-7pm
Sat 9am-5.30pm

LEEDS Tel. 646117
FLYING MODELS, ★
88 CROSSGATES ROAD,
CROSSGATES
Mon–Sat 6am–6pm, Sun 8am–1pm

LEEDS Tel. Morley 522693
MORLEY MODELS ★
10 CHEAPSIDE, MORLEY
Open: 9.30am-6.00pm
Mon, Wed, Thurs & Sat
9.30am-8.00pm Friday
Closed all day Tuesday

SHEFFIELD Tel. 2614
HOBBIES (SHEFFIELD), ★
248 SHALESMOOR
9.30am–5.30pm. Half day Thurs

SHEFFIELD Tel. 581197
SHEFFIELD HOBBIES CENTRE, ★
148 LONDON ROAD
Open 9.30am–5.30pm
Closed all day Thurs

You can buy with confidence from the shops in this Shop Guide

★Shops offering a mail order service are denoted by an asterisk

CLASSIFIED advertisements

All classified Advertisements must be pre-paid.
Private and trade rate 12p per word (min £2.00). Box Numbers 50p extra. Display classified £6.25 per column inch (max 2in.). All advertisements are inserted in the first available issue. Box replies to be sent care of Advertisement Department, PO Box 35, Hemel Hempstead, Herts. HP1 1EE. There are no reimbursements for cancellations.

The Advertising Manager reserves the right to refuse or suspend advertisement without giving any reason. Every care is taken to avoid mistakes but the publishers cannot be held liable in any way for clerical and printing errors or omissions. Receipt of 'copy' for publication implies acceptance of these conditions by the advertiser. Whilst every care is taken to exclude advertisements from doubtful sources no responsibility can be accepted by the publishers for the bona fides of advertisers.

REVERSING SPEED CONTROLLER

Compatible with linear and rotary servos the DP5R30 is controlled by 100° rotation of the input arm. The solid state unit is rated for continuous use at maximum power. Overall size 100 x 80 x 40mm.
Input: 12-30v. Output: 5A max.
£19.95 inc. p&p. (UK)

Enquiries (SAE please) and orders to:
DORNLY PRODUCTS, 82 Hulbert Road,
Havant, Hants. PO9 3TG.

Wanted Shop Assistant. Write or telephone Michaels Models, 646–8 High Road, North Finchley, London, N12 0NL. Tel: 01-445 6531 T

RA Dambuster with 3 suits Nylet sails, progressive winch and radio box £100 o.n.o. Meteor 60 W/C unrun £30. Bell, 151 Obelisk Rise, Northampton. Tel: Northampton 845773 evenings. T

Part built 50in battlecruiser in ¼in plywood, painted. Only motor and propeller fitted, £25. Tel: 01-748 0670. T

Gold Cup HP61R W/C, unused, £69. Webra 40 pylon W/C, as new, £40. Tel: John Bristow. Silchester 700059 T

10cc overhead valve, 4 stroke petrol engine, magneto spark ignition, air cooled, new, suit boat £120. 17 Lillington Close, Leamington Spa. Tel: 23889. T

42in Cabin Cruiser; Decaperm motor and two channel radio control, £75. Tel: Gravesend 50434 evenings. T

6ft Freelance Yacht, traditional keel, complete with mast, 3 sets of sail, fitted for R/C, £50 o.n.o. Tel: 01–330 2577 after 6pm. T

1/20 Scale Brittany Trawler "Marie Morgaur". Super detail, hectorperm motor unused, £150 o.n.o. Tel:01-876 1108. T

Two Gannet 15cc O.H.V. petrol engines for sale. Complete with float chamber, exhaust, coupling and propeller, installed in boats (tatty) £80 each. Lightley, 25 Rockwood Road, Pudsey LS28 5AB. T

KEN FOWLER MODELS (MARINE)

HIGH STREET, COLLINGHAM, Nr. NEWARK, NOTTS.
Tel: Newark 892796

It has been a long time since our last advertisement appeared in these pages. We have been kept busy building all types of marine models for TRENT VALLEY MODELS, MODEL DOCKYARD GARFORTH and MODEL EXPORTS LONDON. We have also catered for the private enthusiast of both working and showcase models.

We now have time available for the acceptance of new orders for our JULY to DECEMBER building programme.

Why not contact us before it becomes too late and ensure that time is set aside for your own project? We also have Showcase Models (In glass cases) already in stock, Brigantines, Clippers, Schooners etc.

KEN FOWLER

DETAILED R.N. WARSHIP DRAWINGS – AMONGST THE BEST WORLDWIDE

All 1/16in = 1ft scale
*These also available ⅛in = 1ft at £6.00

HMS Active, Type 21 with Exocet	*£3.30
HMS Amazon/Antelope, Type 21 Frig.	£3.30
HMS Andromeda, Leander Frigate	£3.30
HMS Birmingham, Type 42, GMD	£3.30
HMS Bristol 1973, Type 82 GMD	£3.30
HMS Bristol 1977, Type 82 GMD	£3.30
HMS Broadsword Type 22 Frigate	£3.30
HMS Cleopatra, Exocet Leander Frigate	£3.30
HMS Fife County GM Destroyer	£3.30
HMS Glasgow, Type 42 GMD	*£3.30
HMS Hermes 1973, Commando Carrier	£9.00
HMS Intrepid 1972, Assault ship	£6.00
HMS Leander Ikara Leander Frigate	*£3.30
HMS Sheffield, Type 42 GM Destroyer	£3.30
HMS Tiger, Helicopter Cruiser	£3.30

Prices include VAT post etc.

JACOBIN LTD., 31 Romans Way,
Pyrford, WOKING, Surrey GU22 8TR

FAST CHARGE ALARMS

Just 2 leads to clip onto Nicad. Gives audible warning at maximum charge. **£5.50** post paid. State number of cells you are charging.

R.N. DESIGN
24 Westbrook Bank, Sheffield S11 8YJ

SHIP MODELS WANTED

Models of period and modern sailing ships purchased for cash, even if in need of restoration or completion. Please contact Paul Smith 01/404/4646, or write, 19 Willowmead Close, Ealing, London W5.

Fox F7 watercooled head, manifold silencer, coupler, test run only, £70 or offer. Box no. 635, (Notts), c/o Model Boats, 13–35 Bridge Street, Hemel Hempstead, Herts HP1 1EE. T

M.F.A. Spearfish for sale with H.P. 40 engine and rubber mounts, Flexible drive, tuned pipe and Futaba radio control, £120 o.n.o. Tel: Epping 74141. T

Wanted: Magpie, Lapwing, any Gerald Smith Motor, condition immaterial. Write: Jim Shelley, 358 Brimingham Road, Walsall. Tel: 28553. TU

World War II
WARSHIPS
David and Hugh Lyon
Development and Construction of 50 Major Warships – Technical Specifications with detailed Colour Drawings
A beautiful book (9 in x 11¾ in. 127pp)
PO/Cheque **£5.95** to FDR PUBLICATIONS,
232 HIGH STREET, NORTHALLERTON,
NORTH YORKSHIRE.
(Overseas Orders in British Currency please)

CUTTY SARK BY LONGRIDGE 2 VOLUMES £10. ⅜ x ¾ OSC steam engine + part boiler £17.50. Model Ships and P.B. 48-56 107 copies £7.50. 63 Copies Model Boats 52-65 £5. Model Boats 1966-79 6 missing £10. All plus carriage.

KERR, 1 Lowlands Road, Blackwater, Camberley, Surrey.

NICADS

0.5Ah (Pencell/HP7 size) £1.20; 1.2Ah* (Electric Flight) £1.40; 1.8Ah* (U11 size) £1.95; 2.0Ah (U11 size) £2.20; 4.0Ah* (U2 size) £3.00. (*Tags available extra 10p per cell). Dual mains trickle charger, 12 nicads (pencells) and charging holders for Tx/Rx conversion £19.00.

BUTTON CELLS Assembled 4.8v pack 225mAh size £2.80. 500mAh (the original DKZ DEAC) £5.00. Centre tap available.

NEW CONSTANT CURRENT CHARGER – any of above nicads in 12/14 hours – any number of cells from 1–12 in series without adjustment £12.45. Send for further details.

UK orders add 50p for post and packing.

PATRICK WALTON (SMALLCRAFT)
38 Stoneleigh Road, Ilford, Essex
***Tel:* 01-550 6642**

The largest range of MODELBOOKS can be obtained from the following:

*Albion Scott Ltd, 51 York Road, Brentford, Middx. Mon-Fri 9-5.30.
Bewdley Bookshop, 7 Welch Gate, Bewdley, Worcs. Mon-Fri 9-4.30, Sat 9-5.
Foyle's, Charing Cross Road, London (Dept. 7), Mon-Sat 9-6.
*also worldwide mail order, write for lists or see the MODELBOOK advertisements in this and other modelling magazines.

Morley Models – Buy, sell, exchange model aircraft, boats, cars, engines and all radio control equipment. If you are selling up we will call. 10–12 Cheapside, Morley, Leeds, Yorkshire. Tel: Morley (0532 – Leeds) 522693/evenings 537328. T/C

Spruce, Obechi, Mahogany strip. Large range of sizes in stock 36in, 48in, 60in lengths. SAE for list. Punctilio Model Spot, Waterloo Road, Hinckley, Leicestershire. T/C

Plans enlarged or reduced and additional copies made. Send for details from: Causer & Co., 216 Goldhawk Road, London W12. Tel: 01-749 3441. T/C

Engraved plates for your models in Brass, Aluminium or Bronze. Letters, Block or Script. Example 3in x 1in Bronze plate with 20 block letters £1.10+9p postage. Brian J. Bowman Models Ltd., "Anela", Lower North Street, Cheddar, Somerset. TU

Wanted – Readybuilt model aircraft, boats, yachts, cars, steam driven models, also engines, kits, radio control equipment, etc. If you are selling up Tel: Godalming 21425. T/C

Unit Steam Engines, boilers, steam engines, casting kits, pop-pops etc. SAE for leaflet to: 41 Church Street, Twickenham, Middx. Tel: 01-892 9997. RST

All model period boat fittings, huge range. Lists 35p, post paid. H.G.H. Models Ltd., 6 Westminster House, Kew Road, Richmond, Surrey. Tel: 01-940 7489. T/C

MARINE STEAM

BOILERS & BURNERS FOR BOATS

(see *Model Boats* Dec. 1978 p.742)

3" dia. x 9" centre flue boiler **£45.00**

Butane Blowtorch to suit **£13.00**

5" dia. x 12" Return flue boiler (for S-T Double 10)

To Order – Price on application

Other types and sizes to your requirement

TREETOWER LTD.
10 Teewell Hill, Staple Hill, Bristol
BS16 5PA

SUPERIOR GLASS FIBRE MOULDINGS

"SPINDRIFT"
Attractive 40" semi-scale Racing Yacht. Hull, Deck/Superstructure and Keel Mouldings.
Price **£29.70.** UK P&P **£2.50** extra

"PROVIDER"
34" traditional North Sea Trawler. Hull Moulding.
Price **£12.00.** UK P&P **£1.50** extra

"WASP"
31" deep 'V' Multiracer for up to 40 engines. Hull and Deck Mouldings in blue, orange, red, green or white.
Price **£14.50.** UK P&P **£1.50** extra

TRADE ENQUIRIES WELCOME

WEECHLEIGH MOULDINGS
11 FOALHURST CLOSE
TONBRIDGE, KENT TN10 4HA
Tel: (0732) 351022

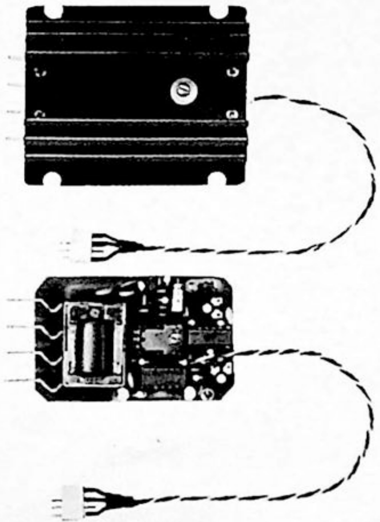
The Digimac II. £67.00 with 2 servos

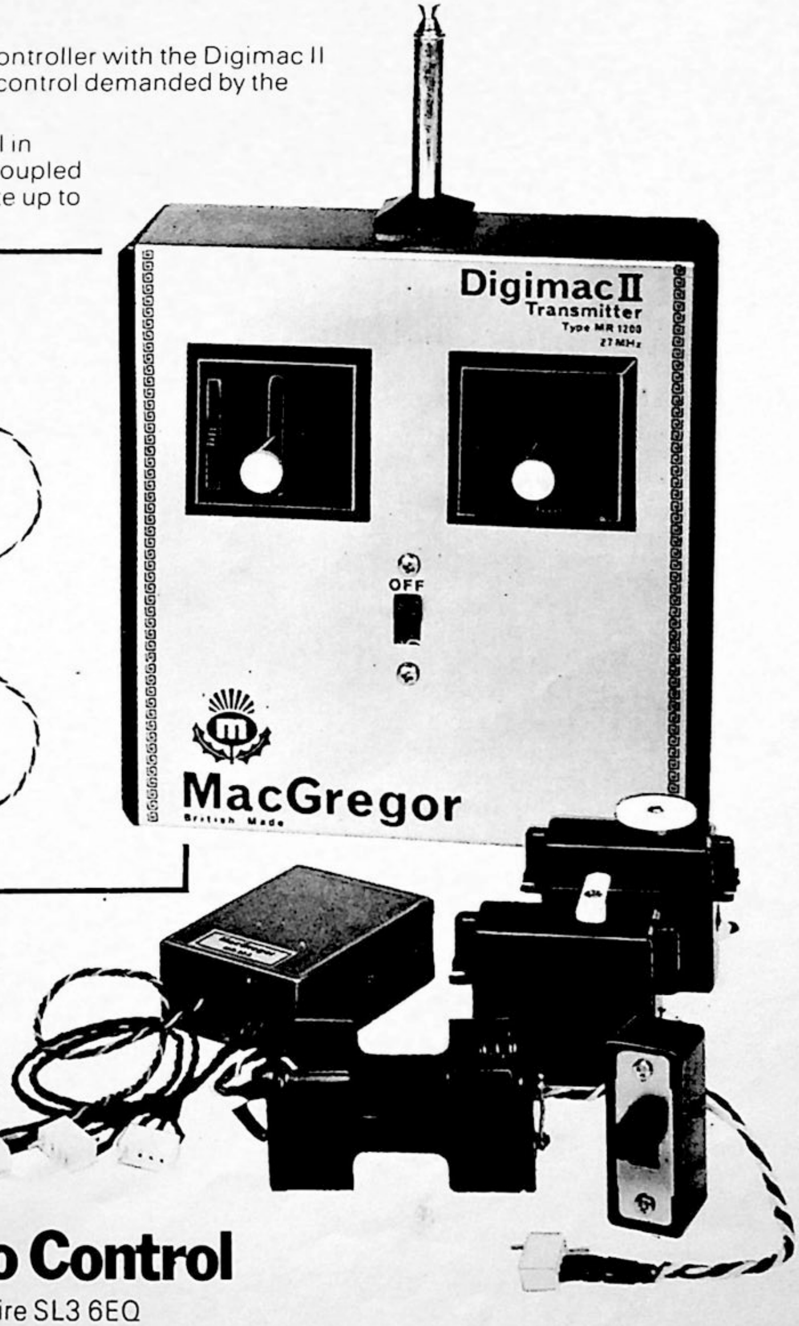
Now you can avoid pushing the boat out!

Let the MR15F proportional speed controller with the Digimac II give you the degree of sophisticated control demanded by the dedicated modeller.

Designed to give proportional control in both forward and reverse direction. Coupled with the AP24 the MR15F will operate up to 30V 10Amps.

MR15F £29.00





Digimac Models and prices (inc. 12½% VAT)

Digimac I dry cell complete with servo	£45·00
Digimac II dry cell complete with 2 servos	£67·00
Digimac III dry cell complete with 2 servos	£82·50
Digimac III Ni-Cad complete with 2 servos	£108·00
Digimac IV Ni-Cad complete with 4 servos	£159·00
Digimac VI Ni-Cad complete with 4 servos	£175·00

MacGregor Radio Control

Canal Estate, Langley, Slough, Berkshire SL3 6EQ

Available from all good model shops

Why settle for 2-channel when 3-channel costs so little more?

RIPMAX FUTABA Medallion 3

The very latest proportional radio from Futaba, which gives you THREE separate control functions at a really realistic LOW PRICE. It's just the outfit that boat modellers have been waiting for!

Nothing skimped. MEDALLION '3' is an all-drycell outfit for initial economy but has the same high quality, superb performance and outstanding reliability for which Futaba is world famous. Simply the best in its class.

3-channel means...

You have proportional RUDDER and THROTTLE CONTROL (or speed control on electric-powered boats) PLUS one extra proportional control which can make all the difference to the performance – and enjoyment – of your model.

TRIM TABS, on fast powerboats for example – to adjust for optimum performance on different legs of a racing course. Instant response via a separate control.

OPERATING LIGHTS, anchor winching, controlling gun turrets, and similar working features on scale models – again signalled quite independent of the main controls.

INDEPENDENT WINCHING and adjustment of foresail and mainsail on yachts and other sailing craft. (You might also like to try 'rudder' on the top-mounted lever control for tiller-steering).

Plus the fact that you are not stuck with a 'limited function' radio outfit if you want to try other types of R/C models. (R/C aircraft, for example, NEED 3-channels.)

Medallion 3
RIPMAX FUTABA
RIPMAX FUTABA Medallion 3

SPECIAL INTRODUCTORY PRICE

MEDALLION '3' TRANSMITTER/RECEIVER Combo only	£29.00
MEDALLION '3' plus 2 FD22M Servos*	£54.00
MEDALLION '3' plus 3 FD22M Servos*	£66.50

*These Servos specially recommended; but you can use others in the Futaba range if preferred. Your local model shop can advise you on this. PRICES quoted include Tx and Rx Battery Boxes (batteries not included); wiring harness with switch; 1 pr crystals and frequency pennant. Outfits WITH Servos include servo mounting accessories.

AVAILABLE AT ALL RIPMAX STOCKISTS

Why settle for 2-channel when 3-channel costs so little more?

RIPMAX FUTABA Medallion 3

The very latest proportional radio from Futaba, which gives you THREE separate control functions at a really realistic LOW PRICE. It's just the outfit that boat modellers have been waiting for!

Nothing skimped. MEDALLION '3' is an all-drycell outfit for initial economy but has the same high quality, superb performance and outstanding reliability for which Futaba is world famous. Simply the best in its class.

3-channel means...

You have proportional RUDDER and THROTTLE CONTROL (or speed control on electric-powered boats) PLUS one extra proportional control which can make all the difference to the performance – and enjoyment – of your model.

TRIM TABS, on fast powerboats for example – to adjust for optimum performance on different legs of a racing course. Instant response via a separate control.

OPERATING LIGHTS, anchor winching, controlling gun turrets, and similar working features on scale models – again signalled quite independent of the main controls.

INDEPENDENT WINCHING and adjustment of foresail and mainsail on yachts and other sailing craft. (You might also like to try 'rudder' on the top-mounted lever control for tiller-steering).

Plus the fact that you are not stuck with a 'limited function' radio outfit if you want to try other types of R/C models. (R/C aircraft, for example, NEED 3-channels.)

Medallion
3
RIPMAX
FUTABA
RIPMAX
FUTABA
Medallion
3

SPECIAL INTRODUCTORY PRICE

MEDALLION '3' TRANSMITTER/RECEIVER Combo only	**£29.00**
MEDALLION '3' plus 2 FD22M Servos*	**£54.00**
MEDALLION '3' plus 3 FD22M Servos*	**£66.50**

*These Servos specially recommended; but you can use others in the Futaba range if preferred. Your local model shop can advise you on this. PRICES quoted include Tx and Rx Battery Boxes (batteries not included); wiring harness with switch; 1 pr crystals and frequency pennant. Outfits WITH Servos include servo mounting accessories.

AVAILABLE AT ALL RIPMAX STOCKISTS